

**START**

RCRA PLANS  
"Compliance Notebook"

for

SIMULATED HIGH-LEVEL WASTE TREATMENT/STORAGE  
PART A, FORM 3, DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88  
EPA/STATE I.D. NUMBER: WA7890008967  
REV. 2

JULY 1989

G. T. Thornton


Pacific Northwest Laboratory  
Richland, Washington 99352



RCRA PLANS  
"Compliance Notebook"  
for  
SIMULATED HIGH-LEVEL WASTE TREATMENT/STORAGE  
PART A, FORM 3, DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88  
EPA/STATE I.D. NUMBER: WA7890008967  
REV. 2

JULY 1989

APPROVED:

  
\_\_\_\_\_  
H. W. Spater, Manager  
Excess Materials Grout Project

7/26/89  
Date

  
\_\_\_\_\_  
W. F. Bonner, Manager  
Process Development Section

7-28-89  
Date

CONCURRENCE:

  
\_\_\_\_\_  
T. J. McLaughlin  
PNL Waste Management and Environmental Compliance

8/3/89  
Date

## COMPLIANCE NOTEBOOK

CONTENTS

INTRODUCTION . . . . .	1
GENERAL PLAN, WAC 173-303-280 . . . . .	2
NOTICE PLAN, WAC 173-303-290 . . . . .	4
WASTE ANALYSIS PLAN, WAC 173-303-300 . . . . .	6
SECURITY PLAN, WAC 173-303-310 . . . . .	10
GENERAL INSPECTION PLAN, WAC 173-303-320 . . . . .	12
TRAINING PLAN, WAC 173-303-330 . . . . .	14
PREPAREDNESS AND PREVENTION PLAN, WAC 173-303-340 . . . . .	17
CONTINGENCY PLAN, WAC 173-303-350 . . . . .	20
EMERGENCY PLAN, WAC 173-303-360 . . . . .	25
MANIFEST PLAN, WAC 173-303-370 . . . . .	28
FACILITY RECORD KEEPING PLAN, WAC 173-303-380 . . . . .	30
FACILITY REPORTING PLAN, WAC 173-303-390 . . . . .	32
INTERIM STATUS PLAN, WAC 173-303-395 TO 440 . . . . .	34
PART A PERMIT APPLICATION . . . . .	APPENDIX A
SHLWT/S WASTE INVENTORY . . . . .	APPENDIX B
SITE/FACILITY MAPS . . . . .	APPENDIX C
SAFE OPERATING PROCEDURE #63 . . . . .	APPENDIX D
LABORATORY E.P. TOXICITY AND CORROSIVITY RESULTS . . . . .	APPENDIX E
QA PLAN #WTC-052 . . . . .	APPENDIX F
INSPECTION LOG FORM . . . . .	APPENDIX G
STAFF TRAINING RECORDS . . . . .	APPENDIX H
PNL-MA-43 SECTION 5, SAFETY TRAINING . . . . .	APPENDIX I
1234 BUILDING EMERGENCY PLAN . . . . .	APPENDIX J
PNL SPILL REPORT FORM . . . . .	APPENDIX K

CONTENTS (cont.)

JOB HAZARD BREAKDOWN #024 . . . . .	APPENDIX L
PROJECT FILE INDEX . . . . .	APPENDIX M

### INTRODUCTION

This "Compliance Notebook" contains plans which are designed to ensure that the Part A Permitted (Appendix A) Simulated High Level Waste Treatment/Storage (SHLWT/S) is carried out in compliance with applicable regulatory requirements. Some of these plans are specifically called for in the interim status regulations. The others are included to demonstrate that the interim status requirements are understood and that the SHLWT/S facility and operation intends to be in compliance with these requirements. These plans also provided a means to distill the interim status requirements down to the specifics which are applicable to the SHLWT/S. These then can be more fully understood by the staff who will be required to ensure compliance.

The "Compliance Notebook" is intended to provide more than adequate information on the SHLWT/S procedures and provisions for protecting human health and the environment. The SHLWT/S operation is permitted as a "one time only" treatment of 209 drums of hazardous waste. The volume and scope of these plans are reflective of the simplicity and duration of the SHLWT/S waste treatment operation. The SHLWT/S operation will be carried out with portable and/or temporary equipment and facilities, thus these plans do not contain large volumes of material addressing complex process equipment or complicated instrumentation and alarms. The "Compliance Notebook" also lacks volumes on emergency response agreements as these are already in place between the U.S.D.O.E. and local municipalities. However, the City of Richland is fully informed of the SHLWT/S operation.

GENERAL PLAN WAC 173-303-280  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER WA7890008967

REV. 1

AUGUST 1988

This plan describes general methods which will be employed to ensure that the Simulated High Level Waste Treatment/Storage facility (SHLWT/S) is in compliance with WAC 173-303-280. All plans required by either WAC 173-303-280 through WAC 173-303-440 or Pacific Northwest Laboratory (PNL) policy shall be reviewed and approved by appropriate PNL management and technical personnel. The technical and management review shall ensure that the management practices of this facility/operation do not present an imminent and substantial hazard to the public health or the environment. Facility closure is not addressed in these plans. A separate closure plan for this facility is being prepared by a consulting firm.

The EPA/state identification number for this facility/operation is WA7890008967.

The SHLWT/S facility will be operated to treat 209 drums of hazardous waste (see Appendix B for Waste Inventory). The waste materials were originally procured as commercial nuclear fuel processing waste simulants. The two simulant formulations are PWO and PW7A. Both are nitric acid and aqueous solutions with dissolved metals and rare earth elements. Little of the PWO or PW7A compositions was ever utilized by the original project which procured them. Other related projects have periodically utilized small portions of these materials. Attempts were made to use the PWO and PW7A simulants in various large scale waste treatment technology tests. After all possibilities for the utilization of these valuable materials in technology testing were exhausted, they were declared waste. A Part A Permit Application, dated 5/19/88, for the treatment of the remaining PWO and PW7A stocks was submitted to the Washington Department of Ecology and the materials were declared waste.

The SHLWT/S facility is located in the 1234 laydown yard in the 3000 area of the Hanford Site (see Appendix C for Facility Map). The treatment portion of the facility is located along the eastern fence of the 1234 yard. It is a roped off and posted area 100 feet long and 57 feet wide, at its widest point. The storage portion of the facility is a roped off posted area located in the south eastern portion of the 1234 yard.

Treatment of the waste will involve neutralization by addition of 19M NaOH solution and the addition of grout formers (see Appendix D for Safe Operating Procedure). All treatment will take place in the waste drums utilizing in-drum mixing equipment.

The wastes are now stored in 55 gallon DOT 17H drums with 90 mil polyethylene liners. Badly corroded drums are also contained in single drum spill pans which provide secondary containment. Drums which are not corroded are stored on PVC pond liners which have been "bermed" at the edges to provide secondary containment.

The 1234 yard and SHLWT/S facility are located on federal land (Hanford Reservation). Local land use is in support of the Hanford mission. Specific local land use is construction and maintenance shops for Kaiser Engineers Hanford (KEH), a U.S.D.O.E. contractor.

NOTICE PLAN WAC 173-303-290  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: 7890008967

REV. 1

AUGUST 1988



Since this facility/operation is not permitted to treat any wastes other than the existing 209 drums of PW0/PW7A slurries at the site, it will not be receiving foreign or other off site wastes. As a result there will be no notifications to the Washington State Department of Ecology of foreign waste shipments, or to generators of permit applicability and waste acceptability. Since the facility/operation is only permitted for a one time only treatment of 209 drums and will cease operation after that treatment, there will not be a need to notify any new owners of the requirements of chapter WAC 173-303.

WASTE ANALYSIS PLAN WAC 173-303-300  
for  
SIMULATED HIGH LEVEL WASTE SLURRY TREATMENT/STORAGE  
PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 1

AUGUST 1988

This plan describes the procedures that will be used to comply with subsections (1), (2), (3), and (4) of section 300 of WAC 173-303. Table 1 shows the composition of the PWO and PW7A slurries as procured. Although thousands of gallons of simulated high level waste were processed in PNL's vitrification programs, little of this particular material was ever utilized. The majority of the unused portion, which remains at the 1234 yard, has not been physically or chemically altered. The only part of the existing PWO/PW7A stocks which has been altered and does not conform to the PWO/PW7A compositions is one 55 gallon drum of a 50/50 mixture of PWO and PW7A (see Table 1 for composition). Since all but one drum of the remaining slurries have been stored at the 1234 facilities and have not been altered chemically or physically, the as procured composition, confirmed by analyses, is presented. The proportions of PWO and PW7A used to make up the one mixed drum are known to be equal. Since the slurries are similar rare earth nitrate/metal nitrate solutions they will not react with each other and the composition of the mixture is a simple addition of equal parts of the PWO and PW7A compositions. The target composition for the mixture, confirmed by analyses, is presented.

The untreated PWO waste is designated as Ignitable (D001); Corrosive,  $\text{pH} < 1$ , (D002); and E.P. Toxic due to the presence of barium (D005), cadmium (D006), chromium (D007), and silver (D011). Laboratory testing shows that the treated PWO waste will be designated non-hazardous (Appendix E). To confirm this, samples from the treated waste will be tested for corrosivity and E.P. Toxicity using methods described in Chemical Testing Methods for Complying with the Dangerous Waste Regulation as called for in WAC 173-303-110(3). Untreated PWO waste is designated as Ignitable as defined by WAC 173-303-090(5) since it is an Oxidizer as defined by 49 CFR 173.151. The PWO waste is designated as an Oxidizer because it contains nitrates. The grout process converts these nitrates to hydroxides thus the resulting grout will not be designated as an Oxidizer and as a result will not be designated as Ignitable. The grouting process converts the nitrates to hydroxides and eliminates the corrosive designation by the addition of 19M sodium hydroxide solution until the waste is in the  $\text{pH} = 5.5$  to  $6.5$  range. Additional reaction to a  $\text{pH}$  of approximately  $11.5$  is accomplished by the addition of the grout forming materials (portland cement, blast furnace slag, fly ash). The single drum of PWO/PW7A mix will be treated as PWO.

The untreated PW7A waste is designated as Ignitable (D001) and Corrosive,  $\text{pH} < 1$ , (D002). Although testing shows that the treated PW7A waste will be designated non-hazardous, to confirm this samples from the treated waste will be tested for corrosivity using the method described in Chemical Testing Methods for Complying with the Dangerous Waste Regulation as called for in WAC 173-303-110(3). The untreated PW7A waste is designated as Ignitable for the same reason as the untreated PWO waste and the treated PW7A waste will not be designated Ignitable for the same reason as the treated PWO waste. The target  $\text{pH}$  values for the PW7A are the same as those given for the PWO. Accomplishing these  $\text{pH}$  targets for both wastes will remove the corrosive designation.

TABLE 1. Compositions of PW-0 and PW-7a Chemical Solutions  
and of 50/50 Mixture of PW-0 and PW-7a as Mixed

<u>Compounds</u>	<u>Concentration, g/L</u>		
	<u>PW-0</u>	<u>PW-7a</u>	<u>50/50 Mix</u>
AgNO <sub>3</sub>	1.80	0	0.90
Ba(NO <sub>3</sub> ) <sub>2</sub>	37.28	0	18.64
Cd(NO <sub>3</sub> ) <sub>2</sub> •4H <sub>2</sub> O	3.26	0	1.63
Co(NO <sub>3</sub> ) <sub>2</sub> •6H <sub>2</sub> O	15.38	0	7.69
Cr(NO <sub>3</sub> ) <sub>3</sub> •9H <sub>2</sub> O	25.37	0	12.69
Fe(NO <sub>3</sub> ) <sub>3</sub> •9H <sub>2</sub> O	232.66	106.72	169.69
KNO <sub>3</sub>	34.18	0	17.09
NaNO <sub>3</sub>	0	263.15	131.58
Ni(NO <sub>3</sub> ) <sub>2</sub> •6H <sub>2</sub> O	56.85	0	28.43
Sr(NO <sub>3</sub> ) <sub>2</sub>	30.19	0	15.10
ZrO(NO <sub>3</sub> ) <sub>2</sub> •2H <sub>2</sub> O	149.68	0	74.84
MoO <sub>3</sub>	88.95	0	44.48
Ce	45.90	73.29	61.10
Rare Earths	301.53	279.47	290.50

Initially, one out of every twenty-five treated drums will be analyzed for the required parameters. The Hanford Environmental Health Foundation (HEHF) will perform actual waste grout sample analyses. At least two out of every twenty-five drums will be randomly sampled so that additional samples will be available for analysis if required. These archives will be stored in the hazmat supply room in the 1234 building until the other samples have been analyzed and the drums disposed of. The archives will then be moved to lab 212 in the 324 building and stored in a manner which will protect their integrity and allow for later analyses. After final site/facility closure the archives will be disposed of. The sample size is sufficient to provide 95% confidence that 99.5% of the treated drums will not be E.P. Toxic or Corrosive. The randomly selected sampling schedule calls for drums 7, 42, 75, 87, 104, and 144 to be sampled and tested for E.P. Toxicity and corrosivity (drums 1 - 150 will be PWO waste). Drums 171, 191, 220, 231, 273, and 276 are to be tested for Corrosivity alone (drums 151 - 300 will be PW7A waste). Drums 20, 35, 58, 76, 107, 137, 152, 176, 208, 236, and 284 will be sampled and held as archives for later analysis if required. The samples will be obtained with a Coliwasa, see Figure 1, as called for in WAC 173-303-110(2). The samples will be from the freshly processed grout while it is still in slurry form and still mixing. The 200 ml samples will be poured into molds and allowed to cure for at least a month before testing. Sample traceability will be maintained using PNL QA procedures, and Chain of Custody procedures outlined in SW-846. Samples will be stored in the hazmat supply room located off of bay 3 in the 1234 building.

One PWO sample from the archive group will have the Bioassay test run on it. This is a WDOE requirement and not an EPA test. This sample must pass the Bioassay test before any PWO can be designated as non-hazardous.

The grouted waste material is expected to pass both the required corrosivity and E.P. Toxicity tests based on laboratory formulation work carried out for the Excess Material Grout Program. This work was carried out according to PNL MA-70 Impact Level II requirements (see Appendix F for QA Plan) and is detailed in Laboratory Record Book BNW 52877. Nine separate formulations were tested for waste solidification. After curing, two grouts were selected for testing by the EPA "Structural Integrity" and "Extraction Procedure-Toxicity." Both formulations passed and the one anticipated to be the most easily processed was chosen for in drum solidification of PWO and PW7A materials. The grouted waste materials also passed the corrosivity test.

As the waste becomes non-hazardous during processing, as confirmed by tests, all labels which are no longer applicable, due to the treatment, will be removed by heat gun or other means.

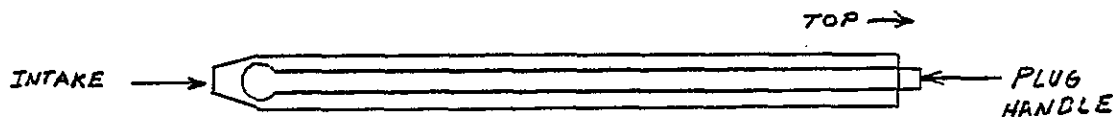


FIGURE 1. Composite liquid waste sampler (COLIWASA)

SECURITY PLAN WAC 173-303-310  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 1

AUGUST 1988

This plan describes the security measures in place in order to comply with WAC 173-303-310.

Signs are posted at the only entrance to the 1234 yard (eastern fence) and on all sides of the active portion of the yard. These signs bear the legend "Danger-authorized personnel only - keep out." The 1234 yard is enclosed by an six foot high chain link fence. The portion of this fence with public access (western boundary) is topped with three strands of barbed wire. The only gate through this fence is padlocked at all times when nobody is working in the yard. The only keys to this padlock are assigned to the following PNL employees: Glenn Thornton, Paul Martin, Bill Rossiter, Lee Piper, and Mike Pueschner. A second gate controls access to the 1234 yard gate during off shift hours, weekends and holidays. The keys to this gate are controlled by Kaiser Engineers Hanford Company (KEH).

In the event of a serious security emergency the onsite Emergency Coordinator is to contact the PNL security office by calling 375-2400 and the City of Richland Police Department by calling 9-911.

GENERAL INSPECTION PLAN WAC 173-303-320  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER WA7890008967

REV. 1

AUGUST 1988



This plan outlines the inspection activities which will be performed at the 1234 yard to prevent equipment malfunctions and deterioration, operator errors, and discharges which may cause or lead to the release of dangerous waste constituents to the environment, or pose a threat to human health. Items at the Simulated High Level Waste Treatment/Storage facility shall be inspected according to the following schedule:

Safety, spill control, security, and processing equipment shall be inspected weekly. This inspection shall take place every Monday morning, or in the event of holidays, vacations or weekend work, the inspection shall be on the morning of the first processing day of each calendar week. This inspection is to ensure that all safety equipment is intact and charged, all spill control supplies are intact, all security structures are intact and in place, and all processing equipment is intact and operating as intended. See Contingency Plan, Page 21, for a listing of safety and spill control equipment to inspect. See Security Plan, Page 10, for security equipment to inspect. See SOP #63 (Appendix D) for processing equipment to inspect.

During processing, the area shall be inspected for previously unnoticed spills at the end of each processing day. Any spill material found on the ground at any time will be cleaned up immediately. Any spill to the ground shall be reported to PNL's Waste Management and Environmental Compliance staff. Any spill material which is contained in the processing spill pans will be cleaned up and grouted with the next PWO/PW7A waste to be treated.

The waste drums shall be inspected twice weekly, on Monday and Friday, throughout all treatment stages. This drum inspection shall pay particular attention to the lower portions of the drums containing untreated waste. Acidic vapors in these drums can condense between the inner 90 mil. plastic drum, which fully contains the liquid waste, and the outer carbon steel drum. Over time these vapors can pit the lower portion of the steel drum.

All inspection data shall be recorded on data sheets to be placed in laboratory record book number 52747 (see Appendix G for Inspection Log Sheet). The inspection data shall include the date and time of the inspection, printed name and hand written signature of the inspector, a notation of the observations made, and the date and nature of any repairs or remedial actions taken. All problems identified in inspections shall be addressed prior to resumption of waste treatment work.

TRAINING PLAN WAC 173-303-330  
for  
SIMULATED HIGH LEVEL WASTE SLURRY TREATMENT/STORAGE

PART A, FORM 3, DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 2

JULY 1989

This plan contains the documentation required to demonstrate that waste treatment operations at the 1234 yard SHLWT/S facility are in compliance with WAC-173-303-330 (see Appendix H for Staff Training Records).

The SHLWT/S operations are not complex. Drummed waste will be moved from the waste storage area to the waste treatment area with a forklift. The waste drums will be opened, mixed and neutralized. After the neutralized waste cools it will be remixed and blended with grout formers. The drummed non-hazardous grout will be cured for a minimum of 30 days and then disposed of.

Present staffing for the SHLWT/S consists of three people. At least one of the three must be a trained forklift operator. At least one of the three must be experienced in grouting operations. All staff must have had OSHA "Right to Know" and OSHA 1910.120 "Hazardous Waste Worker Training" as required by federal law. Also, all workers are required to have been tested by other staff on SHLWT/S facility emergency equipment location. In addition to the Personal Protective Equipment training received in the OSHA 1910.120 classes, all staff have been half mask fit tested and trained to meet internal PNL safety requirements (see Appendix I for PNL-MA-43, Section 5, Safety Training).

Job specific processing training prior to operations is not required. The SHLWT/S process has been developed by the actual operations staff and as a result the staff are very familiar with all phases of the operation. Pre-operation training is also not practical as the SHLWT/S operation will be a one time only event and it is unlikely that on the job training, specific to the SHLWT/S operation, could have been obtained at any location.

Since the relative size of this project is small, the project manager, Glenn Thornton, will act as training coordinator and training director for SHLWT/S staff. Training records will be maintained in project files and by PNL laboratory training coordination staff.

### WORK ASSIGNMENTS

JOB TITLE: GROUT SPECIALIST

POSITION FILLED BY: PAUL F. C. MARTIN

JOB DESCRIPTION: Employee will be responsible for drummed waste grouting operations. Employee must have at least four years of experience in laboratory/pilot scale grout operations. Employee will ensure proper processing and sampling of waste. Employee must have attended OSHA "Right to Know" training, OSHA 1910.120 "Hazardous Waste Worker" training and facility specific "Emergency" training.

INTRODUCTORY TRAINING REQUIRED: Employee will be required to complete OSHA "Right to Know" training, OSHA 1910.120 "Hazardous Waste Worker" training and

facility specific "Emergency" training prior to performing hazardous waste work under the permit which covers the Excess Materials Grout Project.

CONTINUING TRAINING REQUIRED: If for some reason this project were to continue for an extended period the employee would be required to update the OSHA "Hazardous Waste Worker" training with an annual 8 hour refresher course and to complete the facility specific "Emergency" training on an annual basis as long as he/she is assigned to the Excess Material Grout Project.

JOB TITLE: GROUT OPERATOR I

POSITION FILLED BY: GLENN T. THORNTON

JOB DESCRIPTION: Employee will process drummed PWO/PW7A into grout. Employee will assist Grout Specialist with sampling. Employee will be responsible for the safe movement of waste via forklift. Employee must have attended OSHA "Right to Know" training, OSHA 1910.120 "Hazardous Waste Worker" training, facility specific "Emergency" training and forklift training.

INTRODUCTORY TRAINING REQUIRED: Employee will be required to complete OSHA "Right to Know" training, OSHA 1910.120 "Hazardous Waste Worker" training, facility specific "Emergency" training and forklift training prior to completing hazardous waste work under the permit which covers the Excess Materials Grout Project.

CONTINUING TRAINING REQUIRED: If for some reason this project were to continue for an extended period of time the employee would be required to update the OSHA 1910.120 "Hazardous Waste Worker" training annually with an 8 hour refresher course, the facility specific "Emergency" training annually and the forklift training every three years as long as he/she is assigned to the Excess Materials Grout Project.

JOB TITLE: GROUT OPERATOR II

POSITION FILLED BY: Bruce Arey

JOB DESCRIPTION: Employee will process drummed PWO/PW7A into grout. Employee will assist Grout Specialist with sampling. Employee must have attended OSHA "Right to Know" training, OSHA 1910.120 "Hazardous Waste Worker" training, and facility specific "Emergency" training.

INTRODUCTORY TRAINING REQUIRED: Employee will be required OSHA "Right to Know" training, OSHA 1910.120 "Hazardous Waste Worker" training, and facility specific "Emergency" training prior to completing hazardous waste work under the permit which covers the Excess Materials Grout Project.

CONTINUING TRAINING REQUIRED: If for some reason this project were to continue for an extended period of time the employee would be required to update the OSHA 1910.120 "Hazardous Waste Worker" training annually with an 8 hour refresher course, and the facility specific "Emergency" training annually as long as he/she is with the Excess Materials Grout Project.

ADDENDUM TO TRAINING PLAN

July 1989

During the period the grouted material is in storage, awaiting disposal as a non-hazardous waste, a single staff is employed to 1) monitor the condition of the stored non-hazardous material, 2) perform site related activities incident to preparing the grouted material for transport to disposal in the Hanford central landfill, and 3) support preparations prior to initiation of closure plan activities.

Training records will be maintained in the project files and the line organization training files. A description of the work function filled by this individual is as follows:

JOB TITLE: MATERIAL HANDLER

POSITION FILLED BY: David O. Jenkins

JOB DESCRIPTION: Employee will be responsible for the storage and handling of the grouted PWO and PW7A wastes and for yard inspections to ensure safety and environmental compliance. Employee must have attended OSHA "Right to Know" training, OSHA 1910.120 "Hazardous Waste worker training", and forklift training.

INTRODUCTORY TRAINING REQUIRED: Employee will complete OSHA "Right to know" training, "Hazardous Waste Worker Training", and forklift training.

CONTINUING TRAINING REQUIRED: The employee shall complete an annual, 8 hour OSHA 1910.120 refresher course and a forklift retraining session every 3 years.

PREPAREDNESS AND PREVENTION PLAN WAC 173-303-340  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 1

AUGUST 1988

This plan describes methods, either active or administrative, which are in place or will be used to comply with sections WAC 173-303-340. These methods are as follows:

This treatment and storage will take place at the 1234 building laydown yard (see Appendix J for 1234 Building Emergency Plan) which is located on the southern portion of the approximately 560 square mile Hanford site. The City of Richland provides police protection for the southern portion of the Hanford site including the 1234 building and laydown yard. City of Richland Police duties include providing emergency coordination for emergency situations that may arise on this Hanford site. The City of Richland's fire department provides full emergency response for the extreme southern portion of the Hanford site including the 1234 laydown yard and Simulated High Level Waste Treatment/Storage (SHLWT/S) facility. The City of Richland Fire and Police Departments will be made fully aware of this plan prior to PNL commencing any permitted treatment work at the 1234 facility. The Richland Fire and Police Departments will be briefed on the situation and given copies of the contingency plan. They will also have the opportunity to review other project documents. Documentation of the City of Richland's concurrence with these plans will be obtained. Kaiser Engineers Hanford Company (KEH) personnel will also be invited to the meeting with the City of Richland's fire protection and police personnel. See 1234 Building Emergency Plan (Appendix J) for listing of organizations with emergency response agreements with DOE-RL.

Adequate aisle space will be maintained to allow for movement of fire protection, spill control, and decontamination equipment.

The following is a list of all emergency equipment at the 1234 building/laydown yard. Reference the attached facility map (Appendix C) for location assistance.

Two 10 pound general purpose (ABC) fire extinguishers are kept at the gasoline powered air compressor. These are standard general purpose fire extinguishers, are painted red and can be used to extinguish any gasoline fires and paper or pallet rubbish fires which may occur. Fire protection water is available from couplings along the outside west wall of the 1234 building.

Two pallets of spill control equipment are kept at the processing area. This includes one full pallet of 'kitty litter' type absorbent and one pallet containing 200 pounds of sodium bicarbonate for neutralizing acid spills, 200 pounds of citric acid for neutralizing caustic soda solution spills and two shovels for cleaning up spills and placing spill material into drums. The three drums for spill cleanup are also on the second pallet. Any spills or releases to the ground will be cleaned up immediately with the listed equipment to prevent any possible contamination of the groundwater.

The primary emergency communication device is a hand held two way radio kept at the facility, this radio is kept in the operations cabinet (see

site/facility map in Appendix C for location).

Other emergency communications devices are phones located in the 1234 building immediately across the road due east of the 1234 yard. The 1234 building is divided into four large bays or rooms. The phones are located on the west walls of bay two and three (the two middle bays). The phone number for the 1234 building is (509) 376-5579. The alarm at the 1234 yard is a hand held air horn to be used to notify personnel that an emergency situation exists. Whenever an operator is alone at the facility no actual waste treatment activities will be performed.

Decontamination equipment located at the site includes two combination portable eyewash/shower units, one 55 gallon poly lined steel drum of water with a bucket for use in decontamination should personnel be involved in major splashes. There is also two restrooms in the 1234 building with water. These are both located in short separate hallways which run west off of bay two in the 1234 building.

To prevent spills to the soil, all processing will be performed on stainless steel spill pans. These spill pans will be on flexible poly liners which will extend at least three feet beyond all edges of the spill pans. All spills which contact soil or personnel, as opposed to spills which remain on spill pans or contact protective clothing, will be reported through the PNL spill reporting process (see Appendix K for PNL Spill Report Form.)



9573323-0049

CONTINGENCY PLAN WAC 173 303-350  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3, DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 2

JULY 1989

This plan describes methods, either active or administrative, which are in place or will be used to comply with sections WAC 173-303-350 and WAC 173-303-360. These methods are as follows:

This facility/operation is not permitted to treat or store any waste other than the 209 drums of PW0/PW7A wastes located at the facility and the approximately 100 additional drums that the grouting operation will produce once grout forming materials are added to the waste. As a result this facility/operation will not be faced with the problem of dealing with unacceptable and untransportable waste shipments from other generators.

This treatment and storage will take place at the 1234 building laydown yard (see Appendix J for 1234 Building Emergency Plan) which is located on the southern portion of the approximately 560 square mile Hanford site. The City of Richland provides police protection for this portion of the Hanford site and their duties include providing emergency coordination for emergency situations that may arise. The City of Richland's fire department provides full emergency response for the extreme southern portion of the Hanford site including the 1234 laydown yard (SHLWT/T facility). The Richland Fire and Police Departments will be made fully aware of this plan prior to PNL commencing any permitted treatment work at the 1234 facility. They will be provided with copies of this plan and the opportunity to review other project plans. Documentation of the City of Richland's concurrence with this plan will be obtained. Kaiser Engineers Hanford Company (KEH) personnel will also be invited to the meeting with the City of Richland's fire protection and police personnel.

The names, addresses and phone numbers of the persons qualified to act as the emergency coordinator required under WAC 173-303-360(1) are listed below.

In the event of an emergency, the PNL single point contact should be notified first by calling (9)375-2400. The PNL single point contact will immediately call the primary or alternate Emergency Coordinator. If the PNL single point contact can not be reached, the Emergency Coordinator should be notified directly.

**PRIMARY EMERGENCY COORDINATOR:**

Glenn Thornton  
2020 Newcomer  
Richland, WA  
(509)375-4107 (H)  
(509)376-5740 (W)

**ALTERNATE EMERGENCY COORDINATOR**

Paul Martin  
511 Newcomer  
Richland, WA  
(509)946-5662 (H)  
(509)376-2591 (W)

The following is a list of all emergency equipment at the 1234 building/laydown yard. Reference the attached facility map (Appendix C) for location assistance.

Two 10 pound general purpose (ABC) fire extinguishers are kept at the gasoline powered air compressor. These are standard general purpose fire extinguishers, are painted red and can be used to extinguish any gasoline fires and paper or pallet rubbish fires which may occur.

Two pallets of spill control equipment are kept at the processing area. This includes one full pallet of 'kitty litter' type absorbent and one pallet containing 200 pounds of sodium bicarbonate for neutralizing acid spills, 200 pounds of citric acid for neutralizing caustic soda solution spills and two shovels for cleaning up spills and placing spill material into drums. The three drums for spill cleanup are also on the second pallet. Any spills or releases to the ground will be cleaned up immediately with the listed equipment to prevent any possible contamination of the groundwater. Any equipment which contacts spill material will be decontaminated for further use if possible. Any equipment which can not be decontaminated (contaminated pallets are one possibility) will be considered secondary hazardous waste, and as such must be designated the same as the material with which they were contaminated with. Any secondary waste which can not be decontaminated or otherwise disposed of as non-regulated waste will be grouted in much the same manner as the PWO/PW7A wastes.

The primary emergency communication device is a hand held two way radio kept at the facility, this radio is kept in the operations cabinet (see Appendix A for site/facility map and location). Other emergency communications devices are phones located in the 1234 building immediately across the road due east of the 1234 yard. The 1234 building is divided into four large bays or rooms. The phones are located on the west walls of bay two and three (the two middle bays). The phone number for the 1234 building is (509) 376-5579. The alarm at the 1234 yard is a hand held air horn to be used to alert personnel when an emergency situation exists. Whenever an operator is alone at the facility no actual waste treatment activities will be performed.

Decontamination equipment located at the site includes two combination portable eyewash/shower units, one 55 gallon poly lined steel drum of water with a bucket for use in decontamination of personnel involved in major splashes. There is also two restrooms in the 1234 building with water. These are both located in short separate hallways which run west off of bay two in the 1234 building. Any decontamination effluent will be grouted along with all other secondary wastes which can not be decontaminated or other wise disposed of as non-regulated.

In case the facility needs to be evacuated, personnel are to proceed immediately through (over, under or through) the yellow plastic safety chain barrier which makes up the north, east, south and part of the west facility boundry. Once away from immediate, danger personnel are to proceed out through the 1234 yard gate located at the southeast portion of the 1234 yard

fence (see site map, Appendix C, for location references). Evacuation signals are to be by word of mouth or by air horn as the personnel will be working in close proximity to each other and waste treatment work will not be allowed when personnel are at the facility alone. In the event of a serious atmospheric release, as assessed by the onsite Emergency Coordinator, any rerouting of local commuter traffic will be carried out by the Richland Police as advised by the Emergency Coordinator.

The following emergency procedures will be implemented in the event of an emergency (as required by WAC 173-303-360) by the Emergency Coordinator or the Alternate Emergency Coordinator one of whom must be at the facility any time waste treatment work is being performed.

Notify all facility personnel, by use of air horn and word of mouth, that there is an emergency situation (see attached Job Hazard Breakdown (Appendix L) for specific actions required to prevent and react in likely emergency situations).

Notify the Richland Police Department and/or Richland Fire Department, if their help is needed. The Richland Fire and Police Departments can be reached by calling 9-911 on the 1234 building phone. In the event of any emergency the Emergency Coordinator must first call the PNL emergency number, 375-2400.

In the event of a release, fire, or explosion the Emergency Coordinator must identify the character, exact source, amount and areal extent of any released materials. The Emergency Coordinator must also assess possible hazards to human health and the environment (considering direct, indirect, immediate, and long term effects) that may result from the release, fire, or explosion.

If the Emergency Coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment he/she must report as follows: 1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and 2) He must notify the Washington State Department of Ecology and the National Response Center (using their 24-hour toll free number (800) 424-8802). This notification must include the name and telephone number of the reporter, name and address of the facility, time and type of incident, name and quantity of materials involved, extent of any injuries, and possible hazards to human health and the environment outside of the facility. The above notification must be done through DOE-RL by first calling PNL's emergency number, 375-2400, and instructing the responder to notify DOE-RL of the release information. During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other dangerous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or

isolating containers (see attached Job Hazard Breakdown (Appendix L) for emergency prevention measures).

If the facility stops operations in response to fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure buildup, gas generation or ruptures in valves, pipes, or other equipment.

The Emergency Coordinator must ensure that no treatment, storage or disposal of waste that is incompatible with the released material occurs in the affected areas until cleanup procedures are completed. The Emergency Coordinator must also ensure that all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

PNL and DOE-RL must notify WDOE and appropriate local authorities, that the facility is in compliance with the requirements of the above paragraph (WAC 173-303-360(2)(i) before operations are resumed in the affected areas of the facility.

The Emergency Coordinator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen days after the incident, PNL and DOE-RL must submit a written report on the incident to WDOE. The report must include: name, address, and telephone number of the owner or operator; name, address, and telephone number of the facility; date, time, and type of incident; name and quantity of materials involved; extent of any injuries; an assesment of actual or potential hazards to human health or the environment; estimated quantity and disposition of recovered material that resulted from the incident; cause of incident; and description of corrective action taken to prevent reoccurrence of the incident.

Any spills not contained on or in spill pans or spill liners any any spills which breach an employee's protective clothing are to be reported through the PNL spill reporting system (see Appendix K for Spill Report Form). The employee is to fill out the Spill Report Form and contact PNL's Waste Management and Environmental Compliance Staff.

## ADDENDUM TO CONTINGENCY PLAN

July 1989

The grouting operation has been completed. While the non-hazardous material is being stored pending approval to dispose of the material, the following emergency equipment should be on hand:

- Portable eye wash
- Leather gloves
- face shield
- eye goggles
- surgeon's gloves

9513323.0055

EMERGENCY PLAN WAC 173-303-360  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 1

AUGUST 1988

The following emergency procedures will be implemented in the event of an emergency (as required by WAC 173-303-360) by the Emergency Coordinator or the Alternate Emergency Coordinator one of whom must be at the facility any time waste treatment work is being performed. This plan must also be implemented any time a spill to the environment occurs. The person responsible for the spill must ensure that this plan is implemented, that the spill is reported and that the spill is cleaned up.

Notify all facility personnel, by use of air horn and word of mouth, that there is an emergency situation (see attached Job Hazard Breakdown, Appendix L, for specific actions required to prevent and react in likely emergency situations).

Notify the Richland Police Department and/or Richland Fire Department, if their help is needed. The Richland Fire and Police Departments can be reached by calling 9-911 on the 1234 building phone. In the event of any emergency the Emergency Coordinator must call the PNL emergency number, 375-2400.

In the event of a release, fire, or explosion the Emergency Coordinator must identify the character, exact source, amount and areal extent of any released materials. The Emergency coordinator must also assess possible hazards to human health and the environment (considering direct, indirect, immediate, and long term effects) that may result from the release, fire, or explosion.

If the Emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment he/she must report as follows: 1) If his assesment indicates that evacuation of local areas may be advisable, he must immediately notify local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and 2) He must notify the Washington State Department of Ecology and the National Response Center (using their 24-hour toll free number (800) 424-8802). This notification must include the name and telephone number of the reporter, name and address of the facility, time and type of incident, name and quantity of materials involved, extent of any injuries, and possible hazards to human health and the environment outside of the facility.

The above notification must be done through DOE-RL by first calling PNL's emergency number, 375-2400, and instructing the responder to notify DOE-RL of the release information.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other dangerous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers (see attached Job Hazard Breakdown, Appendix L, for emergency prevention measures).



If the facility stops operations in response to fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure buildup, gas generation or ruptures in valves, pipes, or other equipment.

Immediately after an emergency, the Emergency Coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

The Emergency Coordinator must ensure that no treatment, storage or disposal of waste that is incompatible with the released material occurs in the affected areas until cleanup procedures are completed. The Emergency Coordinator must also ensure that all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

PNL and DOE-RL must notify WDOE and appropriate local authorities, that the facility is in compliance with the requirements of the above paragraph (WAC 173-303-360(2)(i) before operations are resumed in the affected areas of the facility.

The Emergency Coordinator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen days after the incident, PNL and DOE-RL must submit a written report on the incident to WDOE. The report must include: name, address, and telephone number of the owner or operator; name, address, and telephone number of the facility; date, time, and type of incident; name and quantity of materials involved; extent of any injuries; an assesment of actual or potential hazards to human health or the environment; estimated quantity and disposition of recovered material that resulted from the incident; cause of incident; and description of corrective action taken to prevent reoccurrence of the incident.

Any spill which contacts soil or personnel by breaching or overwhelming protective equipment or clothing is to be reported to PNL's Waste Management and Environmental Compliance section by filling out a Spill Report Form (Appendix K).

MANIFEST PLAN WAC 173-303-370  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER WA 7890008967

REV. 1

AUGUST 1988

This plan describes the methods to be utilized to comply with WAC 173-303-370.

Since this facility is not permitted to receive off-site wastes, WAC 173-303-370 is not applicable. In the event that the grouted PWO/PW7A wastes do not pass E.P. Toxicity or corrosivity tests and must be shipped to a permitted storage facility as hazardous waste prior to final disposal, the wastes will be properly manifested according to WAC 173-303-180.

9513323.0060


FACILITY RECORD KEEPING PLAN WAC 173-303-380  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 1

AUGUST 1988

Facility records shall be kept in accordance with WAC 173-303-380. Records shall be kept in laboratory record books BNW 52877, BNW 52747, and in files kept by Glenn Thornton in room 227 of the 324 building according to the attached Project File Index (PFI) (Appendix M). Official permit project file index, with reference to the location of all project documents shall be kept by PNL's Waste Management and Environmental Compliance staff within the Laboratory Safety Department. At the end of processing, all project specific files which are required for regulatory compliance will be transferred from SHLWT/S project files to the PNL Waste Management and Environmental Compliance section. 

Operating records, maintained in BNW LRB #52747, will include all information on drums processed, completed inspection logs and copies of completed spill report forms. Operating and other records will be available for inspection.

FACILITY REPORTING PLAN WAC 173-303-390  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: WA7890008967

REV. 1

AUGUST 1988

This plan describes the methods to be utilized to comply with WAC 173-303-390.

Since this facility is not permitted to receive any off-site wastes, unmanifested waste reporting will not be required. Information regarding the operation of this facility will be provided to the U.S.D.O.E. in a timely manner at their request in order for them to complete the required annual reporting for their EPA/STATE I.D. number, WA7890008967. Reports of any releases, fires, or other emergency situations occurring at this facility will be forwarded to WDOE through the U.S.D.O.E.

INTERIM STATUS FACILITY PLANS WAC 173-303-395 TO 440  
for  
SIMULATED HIGH LEVEL WASTE TREATMENT/STORAGE

PART A, FORM 3 DANGEROUS WASTE PERMIT APPLICATION DATE: 5/19/88

EPA/STATE I.D. NUMBER: 7890008967

REV. 1

AUGUST 1988



This plan describes how this treatment/facility will remain in compliance with WAC 173-303-395, 400, 420, 430, and 440.

Since this facility is not permitted to receive any outside waste and all the existing waste which it is permitted to treat is of the same hazard class, oxidizer, there is no need for waste separation per WAC 173-303-395. The PWO/PW7A wastes are designated as ignitable per WAC 173-303-090(5) because they are considered oxidizers per 49 CFR 173.151. They are considered oxidizers per 49 CFR 173.151 because they contain nitrates. This is a prose designation and not a technical one and there is little probability of the waste igniting even under the worst conditions since they are aqueous solutions. However, since these wastes are designated as ignitable, they will be kept away from ignition sources. A violent neutralization reaction would occur if the wastes were to contact the sodium hydroxide treatment solutions or solids. To prevent the unintentional mixing of the acidic wastes and alkaline treatment materials, they will be stored in separate areas. During the later part of neutralization the waste will generate heat. At this point in the process the nitrates have been converted to hydroxides and the waste can no longer be considered an oxidizer or ignitable and thus WAC 173-303-395(1)(c) is not applicable. This facility will not handle any asbestos, will not accept or ship dangerous wastes, and will not operate impoundments or piles and thus WAC 173-303-395(3), (4), and (5) are not applicable. Proper labeling will be maintained per WAC 173-303-395(6).

This facility is an Interim Status facility per WAC 173-303-400 and as such will meet the requirements in WAC 173-303-400. Secondary containment per WAC 173-303-630(7) has not been requested by WDOE and thus is not required for the waste containers. However, secondary containment is being provided for all containers which also fulfills the requirements of 40 CFR 265 for container management.

The requirements of WAC 173-303-420 have been recinded and thus are not applicable to this or any other waste treatment/storage facility.

Compliance with WAC-173-303-430(a) is achieved with spill control equipment spill pans and PVC ground liners. WAC-173-303-430(b) through WAC-173-303-430(g) are not applicable. WAC-173-303-430(h) will be met when the waste products pass required tests to prove that they are non-regulated. WAC-173-303-430-(i) is met by safety training and procedures and the implementation of this training and procedures through processing.

This facility does not treat waste in covered tanks and thus the requirements in WAC 173-303-440(1)(a) are not applicable. However, the waste is not stored near any other incompatible waste and is > 0.5 miles from the nearest surface water. The PWO/PW7A wastes do not meet the requirements of the wastes described in WAC 173-303-090(7)(a)(vi)(vii) or (viii) and thus the requirements in WAC 173-303-440(1)(b) do not apply. This facility does not operate waste impoundments, piles, landfarms, or landfills and thus the requirements in WAC 173-303-440(1)(c) and (2) are not applicable.

APPENDIX A

PART A PERMIT APPLICATION

# DANGEROUS WASTE PERMIT APPLICATION

I. EPA/STATE I.D. NUMBER

WA 7890008967

## FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (mo., day, & yr.)	COMMENTS

## II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

### A. FIRST APPLICATION (place an "X" below and provide the appropriate date)

☐ 1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

☐ 2. NEW FACILITY (Complete item below.)

MO. DAY YR.  
06 87

FOR EXISTING FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the space to the left)

MO. DAY YR.  
 87

FOR NEW FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR IS EXPECTED TO BEGIN

### B. REVISED APPLICATION (place an "X" below and complete Section I above)

☒ 1. FACILITY HAS AN INTERIM STATUS PERMIT

☐ 2. FACILITY HAS A FINAL PERMIT

## III. PROCESSES — CODES AND DESIGN CAPACITIES

A. PROCESS CODE — Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the (Section III-C).

B. PROCESS DESIGN CAPACITY — For each code entered in column A enter the capacity of the process.

1. AMOUNT — Enter the amount.

2. UNIT OF MEASURE — For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO- CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PRO- CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:			Treatment:		
CONTAINER (barrel, drum, etc.)	301	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
ANK	302	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
STE FILE	303	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	304	GALLONS OR LITERS			
Disposal:			OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or inciner- ators. Describe the processes in the space provided; Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
INJECTION WELL	080	GALLONS OR LITERS			
LANDFILL	081	ACRE-FEET (the volume that would cover and sate to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	082	ACRES OR HECTARES			
OCEAN DISPOSAL	083	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	084	GALLONS OR LITERS			
UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	S
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING SECTION III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PRO- CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY	LINE NUMBER	A. PRO- CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY
		1. AMOUNT (specify)	2. UNIT OF MEA- SURE (enter code)				1. AMOUNT (specify)	2. UNIT OF MEA- SURE (enter code)	
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	S 0 1	20,000	G		7				
	T 0 4	550	U		8				
3					9				
4					10				

Continued from the front.

## III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

## T04, S01

This permit covers a one-time proposal to immobilize approximately 200 55-gallon drums of a simulated high level waste slurry that contains enough natural radioactivity to designate as RMW. The program that originally procured this specialty chemical was eliminated before the material was used for R&D purposes. Although the material has been used intermittently, all remaining material with no future use will be treated.

The RMW will be neutralized and mixed with grout in a "Littleford" mixer and poured into 55-gallon, DOT 17H containers to solidify, eliminating the characteristics of ignitability and EP Toxicity; a photograph of the mixer and controls can be found under the "Physical/Chemical Treatment Technologies." The treatment design capacity is 550 gallons per day.

The grouted slurry will be stored in drums at the site of generation and treatment (1100 Area, see attached drawing) until tests (e.g., EP Toxicity) are completed to verify the wastes can be disposed as non-hazardous waste.

This "Simulated High Level Waste Slurry" was formerly known as "PW-0" and "PW7/7A Material."

## IV. DESCRIPTION OF DANGEROUS WASTES

A. DANGEROUS WASTE NUMBER — Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS .....	P	KILOGRAMS .....	K
TONS .....	T	METRIC TONS .....	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

## D. PROCESSES

## 1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous waste: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

## 2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER — Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2			T 0 3 D 8 0	included with above

9513323.0069

## Simulated High Level Waste Slurry Treatment/Storage

5/19/88

Rev. 0

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 25 wastes to list.

ID. NUMBER (enter from page 1)

W A 7 8 9 0 0 0 8 9 6 7

## IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	D 0 0 1	150,000	P	S 0 1 T 0 4	Storage/Treatment
2	D 0 0 2	included in above			
3	D 0 0 5	"			
4	D 0 0 6	"			
5	D 0 0 7	"			
6	D 0 1 1	"			
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

9513323.0070

## Simulated High Level Waste Slurry Treatment/Storage

5/19/88

Rev. 0

Continued from the front.

## IV. DESCRIPTION OF DANGEROUS WASTES (continued)

E USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION D(1) ON PAGE 3.

Material to be treated is designated as ignitable (D001), corrosive (D002) due to pH  $\leq 2.0$  and EP Toxic due to barium (D005), cadmium (D006), chromium (D007) and silver (D011) and is also radioactive due to naturally-occurring elements present.

## V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

## VI. PHOTOGRAPHS \*This information appears on the attached drawing and photographs.

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

## VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, &amp; seconds)

LONGITUDE (degrees, minutes, &amp; seconds)

## VIII. FACILITY OWNER

☒ A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER

2. PHONE NO. (area code &amp; no.)

3. STREET OR P.O. BOX

4. CITY OR TOWN

5. ST.

6. ZIP CODE

## IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type)

Michael J. Lawrence, Manager  
U.S. DOE, Richland Operations

SIGNATURE

Michael J. Lawrence

DATE SIGNED

5-19-88

## X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type)

SIGNATURE

DATE SIGNED

SEE ATTACHMENT

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael J. Lawrence  
Michael J. Lawrence, Manager  
Department of Energy  
Richland Operations Office

5-19-88  
Date

William R. Wiley  
William R. Wiley, Director  
Pacific Northwest Laboratory

5/19/88  
Date

9513323.0072

WA7890008967

# Simulated High-Level Waste Slurry Treatment/Storage



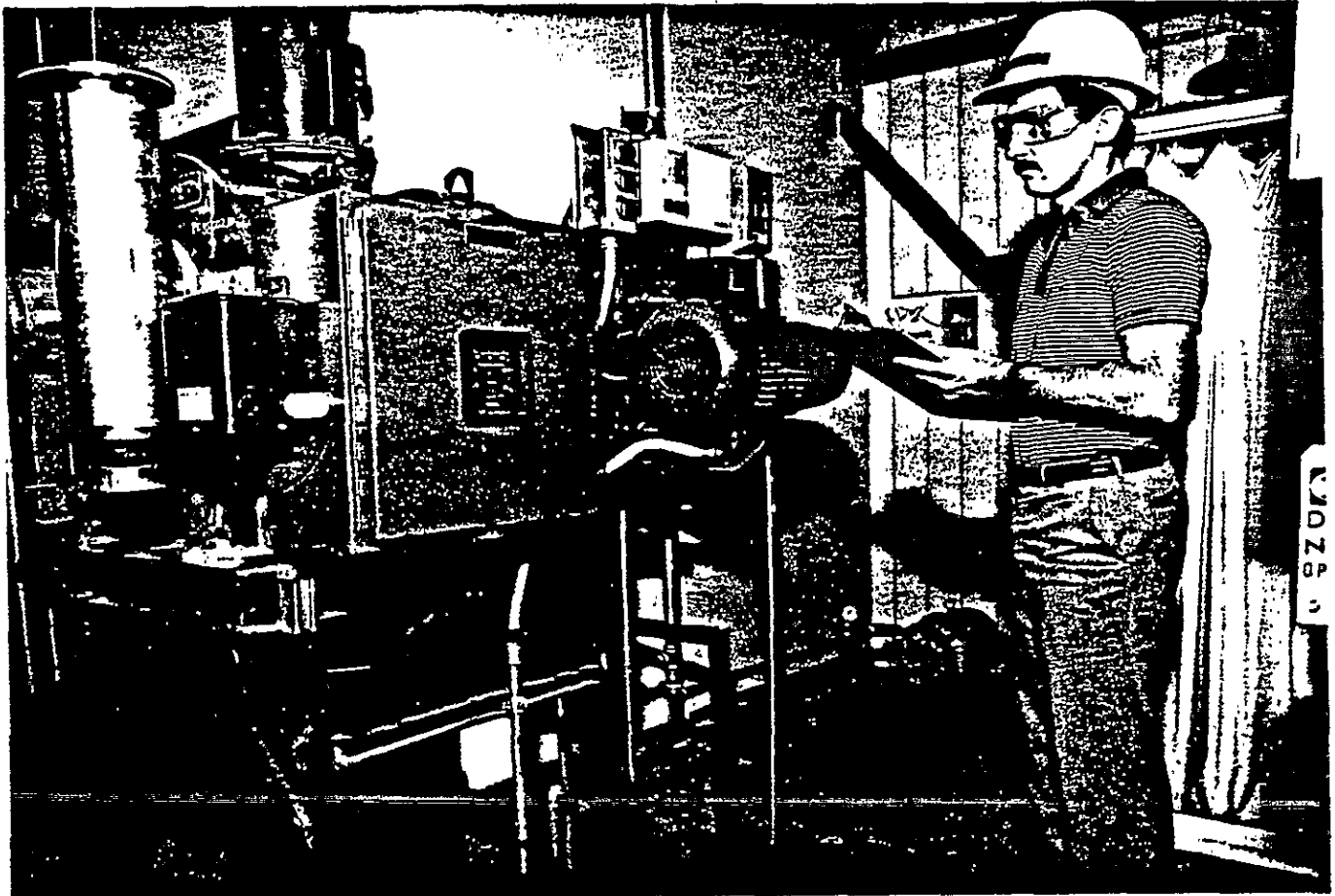
Longitude 118°18'54"  
Latitude 46°20'52"

8801374-2CN  
Photo Taken 1988

78984-124.3



## Simulated High-Level Waste Slurry Treatment/Storage Grout Mixer Controls



Longitude 119°16'37"  
Latitude 46°22'20"

84B822-19CN  
Photo Taken 1988

## Simulated High-Level Waste Slurry Treatment/Storage 15 GPM Continuous Grout Mixer

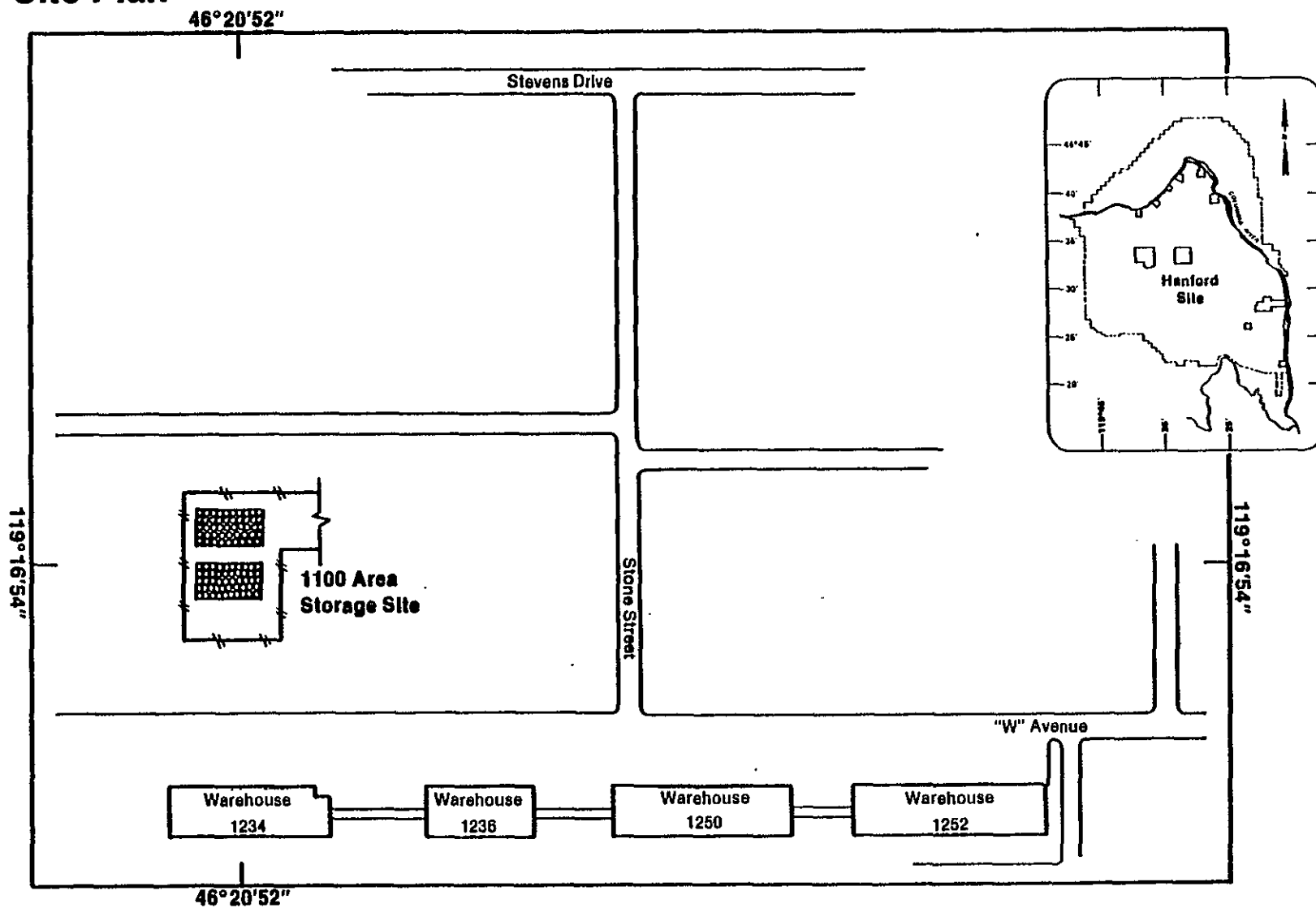


Longitude 119°16'37"  
Latitude 48°22'20"

8406853-24CN

Photo Taken 1984

# Simulated High-Level Waste Slurry Treatment/Storage Site Plan



78204-120.18

WA7890008967

9513322.1075

APPENDIX B

SHLWT/S WASTE INVENTORY

SHLWT/S WASTE INVENTORY

<u>TYPE</u>	<u>DRUMS</u>
PW7A	100
PW0*	98
SECONDARY WASTES**	11

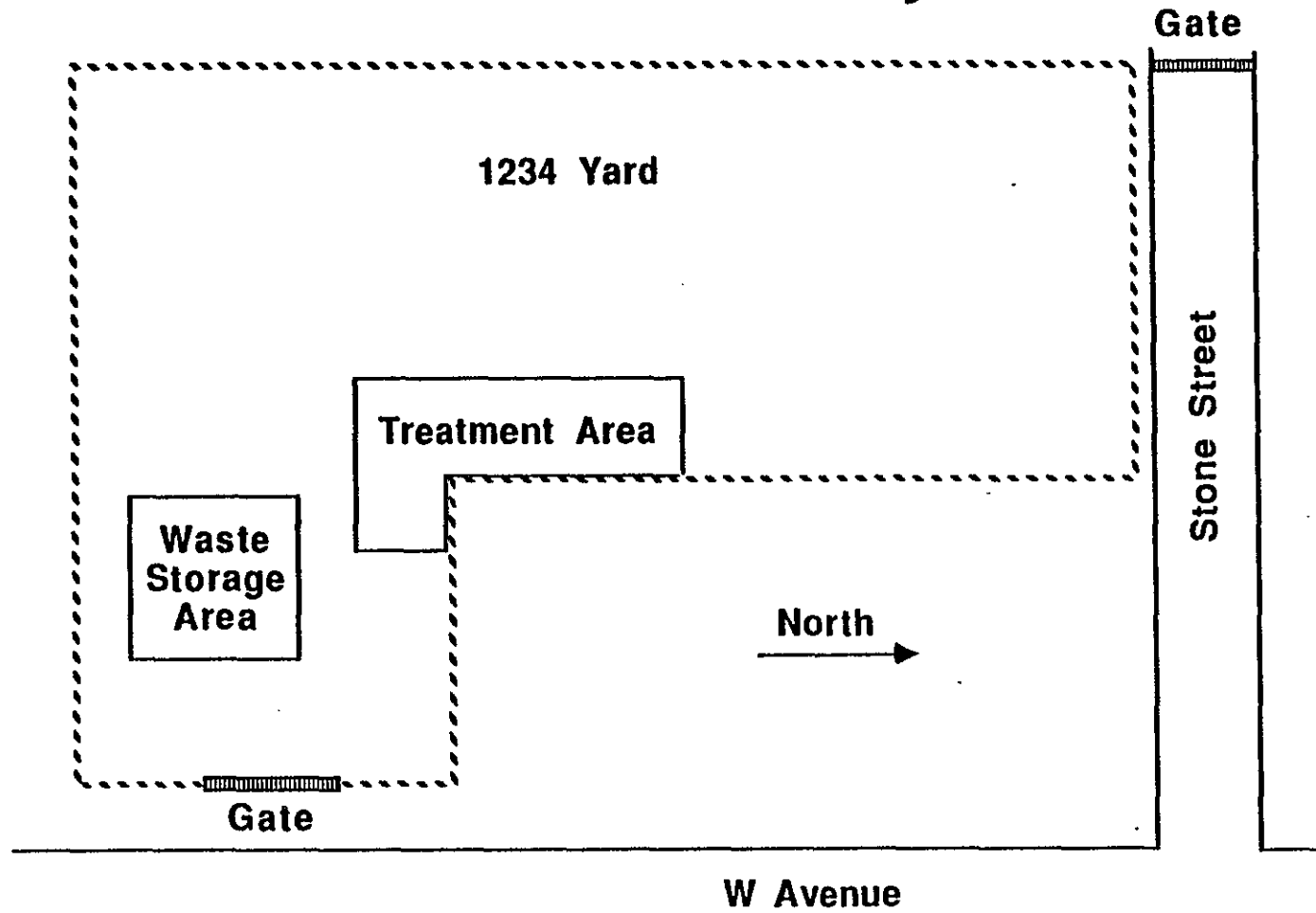
\* Includes 1 drum 50/50 mix to be treated as PW0 due to E.P. Toxicity.

\*\* Includes drum liners, absorbent and soil from repackaging and cleanup of 9/87 spill of PW7A.

APPENDIX C

SITY FACILITY MAPS

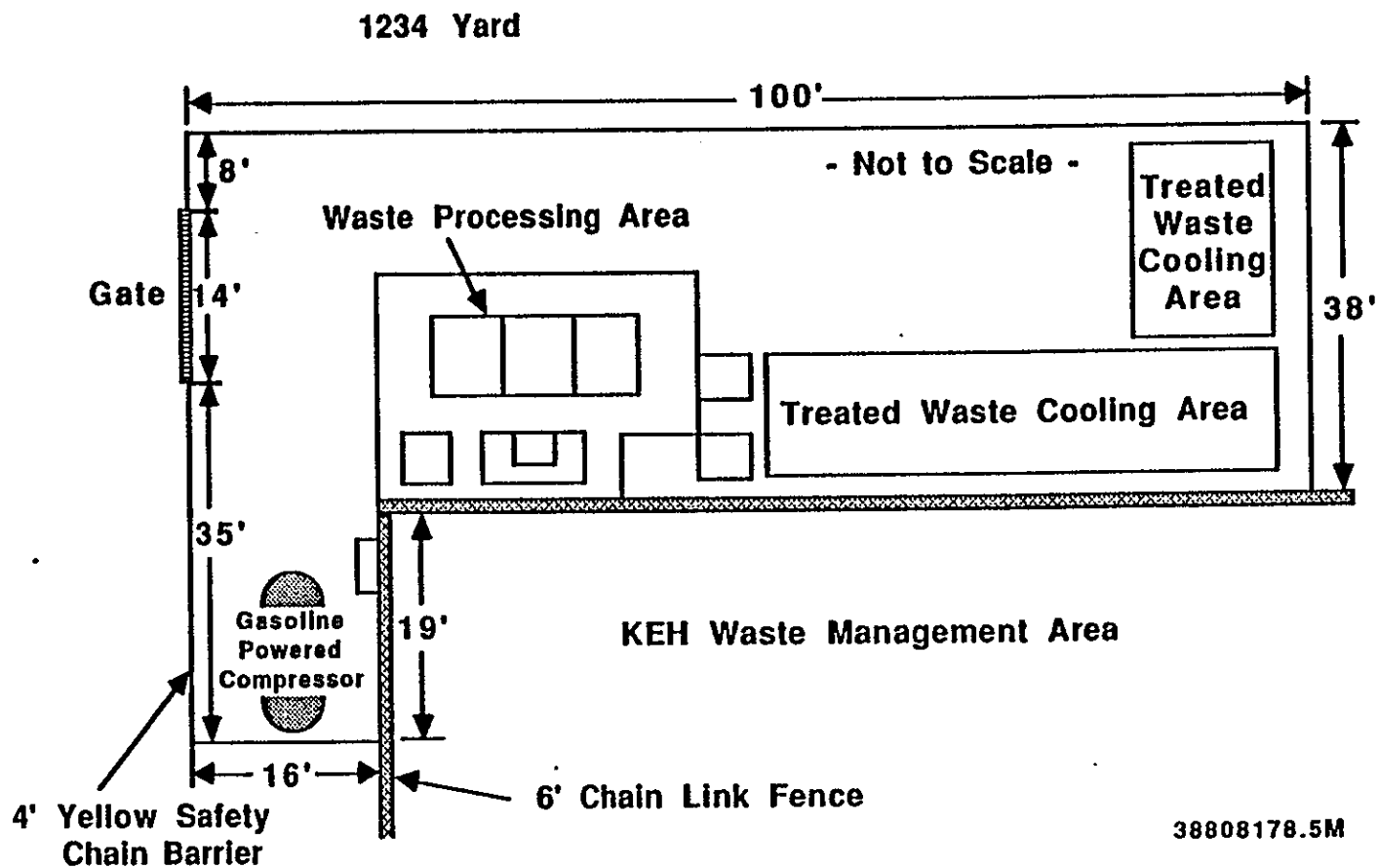
# SHLWT/S Facility



38808178.6M

9514323.0079


# SHLWT/S Treatment Area





APPENDIX D

SAFE OPERATING PROCEDURE #63

 <b>Battelle</b> Pacific Northwest Laboratories	<b>SAFE OPERATING PROCEDURE</b> PROCESS TECHNOLOGY DEPARTMENT				PROCEDURE NO. 63
					PAGE 1 OF 5
TITLE <b>In-Drum Mixing--Excess Materials Grout Program</b>					ISSUE DATE 7/26/88
BUILDING - ROOM 1234 laydown Yard					SUPERSEDES ISSUE DATED
PREPARED BY Paul F. C. Martin <i>Paul F. C. Martin</i>		DATE 7/26/88	REVIEWED BY Glenn Thornton <i>Glenn Thornton</i>		DATE 7/26/88
REVIEWED AND APPROVED BY					
ORGANIZATION	NAME	TITLE			DATE
Process Tech Dept. - Section Manager	WF Bonner	<i>WF Bonner</i>			7-26-88
Safety and NMM	DL Wright	<i>DL Wright</i>			7-28-88
PNL Building Manager	MJ Pueschner	<i>MJ Pueschner</i>			7-28-88
Responsible Engineer	GT Thornton	<i>GT Thornton</i>			7-28-88
Radiation Monitoring					
Quality Assurance	LE Thompson	<i>LE Thompson</i>			8-9-88
ANNUAL REVIEW DATES	7/89	7/90	7/91	7/92	
REVIEWED & APPROVED BY/DATE					

- 1.0 Introduction
- 2.0 Other Applicable Procedures
- 3.0 Job Site Preparation
- 4.0 Neutralization of Acid Wastes
- 5.0 Addition of Grout Formers
- 6.0 Curing
- 7.0 Cleanup

#### 1.0 Introduction

The following procedure will be used to neutralize and grout acid waste in 55 gallon drums under the Part A, form 3 Dangerous Waste Permit application submitted to the Washington Department of Ecology (WDOE) on 5-19-88, titled "Simulated High Level Waste Treatment/Storage" (SHLWT/S). This procedure is supplemented and intended to be used with Job Hazard Breakdown (JHB) # 024. This procedure is the governing document for actual waste handling, treatment and storage. All requirements contained in this document or other applicable documents listed in section 2.0 of this SOP are to be strictly adhered to. Although JHB #024 and this Safe Operating Procedure (SOP) were written to be as complete as possible, not all hazards can be recognized before work begins.

## SAFE OPERATING PROCEDURE

**2.0 Other Applicable Procedures**

SHLWST/S Part A Permit Application, Rev. 0  
 EMGP Project Management Plan, Rev. 1  
 QA Plan WTC-052, Rev. 0  
 RCRA Approval Sheets and Checklist  
 1234 Yard Site/Facility Map

SHLWST/S General Plan	WAC-173-303-280
SHLWST/S Notice Plan	WAC-173-303-290
SHLWST/S Waste Analysis Plan	WAC-173-303-300
SHLWST/S Security Plan	WAC-173-303-310
SHLWST/S General Inspection Plan	WAC-173-303-320
SHLWST/S Training Plan	WAC-173-303-330
SHLWST/S Preparedness and Prevention Plan	WAC-173-303-340
SHLWST/S Contingency Plan	WAC-173-303-350
SHLWST/S Emergency Plan	WAC-173-303-360
SHLWST/S Manifest Plan	WAC-173-303-370
SHLWST/S Facility Record Keeping Plan	WAC-173-303-380
SHLWST/S Facility Reporting Plan	WAC-173-303-390
SHLWST/S Interim Status Facility Plans	WAC-173-303-395 to 440

**3.0 Job Site Preparation**

- 1) Read Job Hazard Breakdown (JHB)
- 2) Read all instructions for the safe operation of the air compressor. Inspect air hoses and fittings for signs of damage. Clean or replace fittings if necessary.
- 3) Read all instructions for the safe operation of air mixers. Check filter and lubricator daily for condition. Empty filter and fill lubricator with oil if required. Inspect mixers daily for signs of corrosion. Inspect impellers and shafts daily for secure connection. Prior to operations in each drum check mixer for secure attachment to drum.
- 4) Ensure ready availability of all needed safety apparatus (see JHB #024, attached). Check integrity of protective clothing daily. Drain and refill eye wash. Check charge and condition of fire extinguisher.
- 5) Make another check for unsafe conditions.
- 6) Fill gas tank of air compressor.
- 7) All work is to be performed in a spill pan located on top of a larger flexible polymeric liner. All waste drums will be stored on a properly bermed polymeric liner to prevent any leaks or spills from reaching the ground.

**4.0 Neutralization of Acid Wastes**

Hazard Summary (see JHB #024, attached)  
 Chemical Burns--Wearing of safety apparel is mandatory. Eye protection is of greatest importance.

TITLE

In-Drum Mixing - EMGP

REVISION

0

SOP NO

63

DATE

7/26/88

PAGE

2

OF

5

## SAFE OPERATING PROCEDURE

Splash--check for proper setting of air compressor regulator before making connections. If regulator is not in the off position unanticipated starting of the equipment may occur and may result in splashing. All drum processing will take place with drums on a spill pan.

Heat--suspend neutralization operations if slurry temperature exceeds 85°C.

Pressure--drum should remain unsealed after neutralization (except when moved to cooling area).

- 1) Measure into a calibrated carboy enough 19M NaOH to neutralize the slurry as follows:

PW7A (30 gal)	4.1 gal 19M NaOH
PW0 (30 gal)	7.2 gal 19M NaOH

- 2) Transfer a pallet holding four PW0/PW7A drums to a stainless steel splash pan, inspect drums to ensure that they will be acceptable for disposal after grouting.
- 3) When connecting or disconnecting air hoses from equipment make sure that the regulator has been adjusted to the "off" position.
- 4) Insert agitator into each drum and adjust volume of the drums to 30 gallons by pumping off well agitated slurry into another plastic lined drum. The 30 gallon level is to be achieved by measuring a pre-determined free board. Closely monitor the speed of mixer so that no splashing of slurry occurs.
- 5) Begin slow addition of 19M NaOH, to the surface of the slurry, at a rate no greater than 0.5 gal/minute. Monitor the slurry temperature. If the slurry temperature reaches 85°C neutralization should be suspended so the slurry temperature may decrease to ambient. When finished neutralizing, the pH should be  $6 \pm 0.5$ . Over-neutralization may result in a slurry that will be too thick to easily process. If over neutralization occurs, the overly alkaline treated slurry will be mixed with enough untreated waste to adjust the pH down to the correct range.
- 6) Label each drum that has been neutralized. Bolt the lid on the drum and move it to the drum storage area where it can cool without creating an obstruction. Loosen the lid on the drum while cooling is taking place after the drum has been moved to the drum storage area.
- 7) Initial efforts will be focused on completing the neutralization step first, this will allow operators to eliminate the corrosive and oxidizing hazards of the waste. Some grouting will occur during the neutralization phase: any drums remaining in the spill pans at the end of a shift will be left there and allowed to cool. On the following day the drums in the spill pans from the preceding day will be grouted prior to the beginning neutralization operations for that day. By operating in this manner some unnecessary transportation of the drums will be eliminated thus reducing

TITLE	REVISION	SOP NO
In-Drum Mixing - EMGP	0	63
	DATE	PAGE
	7/26/88	3 OF 5

## SAFE OPERATING PROCEDURE

occupational and environmental hazards associated with possible spills.

### 5.0 Addition of Grout Formers

Hazard Summary (see JHB #024, attached)

Dust--The powdered grout formers present an inhalation hazard. Wear a half mask HEPA respirator to prevent inhalation of particles. The respirator cartridges should be changed at least at the start of every shift.

Splash--check for proper setting of regulator before making connections. If regulator is not in the off position unanticipated starting of the equipment may occur and may result in splashing. All drum processing should take place with drums on a spill pan.

- 1) After the neutralized slurry has cooled to below 45°C the grout formers may be added. Agitate the solution for a sufficient period to bring any settled solids into suspension.
- 2) Begin by slowly adding one 80 lb bag of fly ash so as not to allow clumping of solids. Note: This material contains free silica and can result in chronic lung damage if respirators are not worn. Mix until the fly ash is completely incorporated into the slurry. In a similar manner, add one 90 lb bag of blast furnace slag.
- 3) Slowly add one 94 lb bag of portland cement. If the viscosity of the slurry changes so that mixer speed decreases greatly and too great a load is placed on the mixer, add 15  $\pm$  5 fluid ounces (440  $\pm$  150 milliliters) of Master Builders water reducing admixture "LL-400-N" to the drum. All bagged grout formers are to be held at chest level near the processing area with a forklift so that operators will not need to lift the bags and will only have to carry them a very short distance ( $\leq$  5 feet).
- 4) After the cement has been incorporated continue mixing for another 2-3 minutes or until the grout begins to gel and becomes too thick. Turn the regulator completely off and disconnect air hoses then remove the mixer. Coil the air hoses so they will not be a tripping hazard and will not be damaged by traffic. Cleaning of the mixer is required only at the end of shift or if there has been buildup on the impellers or shaft. If cleaning is not required simply clamp the mixer to the next drum to be processed and reconnect the air hoses.
- 5) A minimum of 5 sweeps of the bottom of the freshly grouted drum with a stainless steel rod is required to ensure all material is thoroughly mixed with grout formers. Clean the rod in the same manner as the mixer.

### 6.0 Curing

After addition of grout formers the drum should be moved to a drum storage area with spill containment provisions. Because

TITLE  In-Drum Mixing - EMGP	REVISION <u>0</u> SOP NO <u>63</u> DATE <u>7/26/88</u> PAGE <u>4</u> OF <u>5</u>
------------------------------------	---

## SAFE OPERATING PROCEDURE

there is a possibility of gas generation during the initial curing of the grout, lid clamps should be loosened once the drums are in the cooling area so that any pressure can escape.

### 7.0 Cleanup

At the end of each shift, spill pans and liners will be wiped clean and the work area inspected for spills to the soil. Any previously unnoticed or unreported spills will be immediately reported to PNL Waste Management and Environmental Compliance personnel. All rags and sponges used in clean up will be saved as secondary waste and grouted with other secondary wastes from this project.

TITLE

In-Drum Mixing - EMGP

REVISION

0

SOP NO

63

DATE

7/26/88

PAGE

5

OF

5

APPENDIX E

LABORATORY E.P. TOXICITY AND CORROSIVITY RESULTS

# GROUTED PWO / PW-7A LABORATORY RESULTS

## E P TOXICITY RESULTS

<u>ELEMENT</u>	<u>REGULATORY LIMIT, PPM</u>	<u>CONCENTRATION IN PWO LEACHATE, PPM</u>	<u>CONCENTRATION IN PWO, PPM</u>
Ag	5	<0.1	1,100
Ba	100	0.9	19,600
Cd	1	<0.04	1,200
Cr	5	<0.2	3,300

## CORROSIVITY RESULTS

<u>REGULATORY LIMIT, PH</u>	<u>TREATED PW-7A, PH</u>	<u>TREATED PWO, PH</u>
12.5	11.26	12.01

0573323.0088



APPENDIX F

QA PLAN # WTC-052

## PNL-MA-70 QA PLAN

QA Plan No. WTC-052 Rev. 0

Issue Date: June 20, 1988

Page 1 of 2

## PROJECT IMPACT LEVEL: II

TITLE: Excess Materials Grout Program

SCOPE: This QA Plan covers the solidification of excess process chemicals using grout including the grout formulation development, process equipment procurement, chemical processing and product testing. The purpose of the project is to solidify ~200 drums of existing liquid Radioactive Mixed Waste in compliance with the Dangerous Waste Permit titled "Simulated High Level Waste Slurry Treatment/Storage" which was signed on 5/19/88.

CLIENT: PNL

AUTHORIZING DOCUMENT: Work Package Numbers under Subaccount 95122. Additional Work Packages will be opened as project progresses.

## QA REQUIREMENT SPECIFICATION(S):

☒ ANSI/ASME NQA-1 as delineated in PNL-MA-70

☐ Other

Impact Level II work elements shall comply with the applicable requirements, as appropriate for the work being performed, in Parts 1 and 3 of PNL-MA-70. Impact Level III activities shall comply with the GPS Standards located in Part 2 of PNL-MA-70. This QA Plan also identifies client QA requirements, if applicable, and any client imposed exclusions or limitations to PNL procedure requirements. If other quality-related activities are later performed, the appropriate PNL-MA-70 requirements and procedures shall be applied, unless specifically excluded.

## CONCURRENCES AND APPROVAL:

  
COGNIZANT MANAGER (Concurrence)

G. T. THORNTON

6/3/88  
Date  
QUALITY ENGINEERING (Concurrence)

J. W. Smith

6/14/88  
Date  
LINE MANAGER (Approval)

W. F. Bonner

6-20-88  
Date

## PNL-MA-70 QA PLAN

QA Plan No. WTC-052 Rev. 0

Issue Date: June 20, 1988

Page 2 of 2

**QA PROGRAM/ORGANIZATION:**

The PNL Quality Assurance Program conforms to the requirements of NQA-1 as interpreted by Parts 1 and 3 of PNL-MA-70, Quality Assurance Manual. This QA Plan applies only to the work elements designated Impact Level II identified in Attachment One. Work elements designated Impact Level III shall conform to the requirements delineated in the Good Practices Standard, which is Part 2 of PNL-MA-70. The key personnel associated with the operation of this activity are identified on Attachment two.

**IMPACT LEVEL:** II. See Attachment One for the specific work elements.

**SPECIAL CLIENT REQUIREMENTS:** No client requirements.

**OTHER REQUIREMENTS, DIRECTION OR PLANNING:**

- a) There are no major procurements planned for this project.
- b) There are no known activities which require qualified and certified inspection personnel per PAP-70-203.
- c) There are no known controlled processes to be performed within the scope of this QA Plan per PAP-70-901. There are no known special processes to be performed within the scope of this QA Plan per PAP-70-902.
- d) Records shall be indexed and maintained per PAP-70-1701 and shall be designated for nonpermanent single storage. Records turnover shall be at the completion of the project when it is no longer necessary to maintain them in the contributor's files. Records shall be maintained at PNL records center for a period of at least three years after the completion of the project as required by the Resource Conservation and Recovery Act (RCRA).
- e) There will be no sample archiving.

05/22/02

NOTE: Code refers to Exhibit 1  
of PAP-70-208, Rev. 1

Attachment Two  
QA Plan WTC-052, Rev. 0  
Page 1 of 1

#### KEY PROJECT PERSONNEL

R. O. Lokken: Task Manager for Task 0202, Formulation Development  
Chemical Systems Analysis Section  
Materials and Chemical Applications Department.

P. F. C. Martin: Task Manager for Task 0203, Operations  
Chemical Systems Analysis Section  
Materials and Chemical Applications Department.

L. E. Thompson  
Quality Engineer

G. T. Thornton: Program Manager; Task Manager for Task 0201,  
Project Management; and Task Manager for Task 0204, Product  
Disposal.  
Process Development Section  
Process Technology Department

APPENDIX G

INSPECTION LOG FORM

Daily - Processing Area for Spills  
M & F - Treated and Untreated Waste  
Weekly - Safety, Spill Control and  
Processing Equipment

For Week \_\_\_\_\_ to \_\_\_\_\_  
Log Page No. \_\_\_\_\_  
Placed on Page No. \_\_\_\_\_ of BNW LRB #52747

SHLWT/S INSPECTION LOG

Week Day	Inspection Time	Printed Name of Inspector	Inspector's Signature	Observations and Response	Date Response Completed
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					

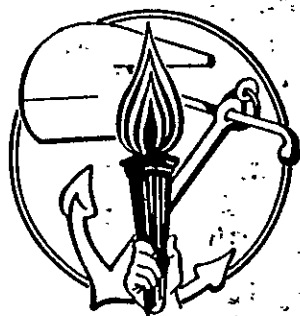
Log Reviewed By: \_\_\_\_\_  
Name \_\_\_\_\_ Date \_\_\_\_\_

4516723-0095

APPENDIX H

STAFF TRAINING RECORDS





P.O. Box 1142  
Beaverton, OR 97075-1142

(503) 286-2950  
24-Hour Answering Service

GLENN THORNTON

has completed the course

**HAZARDOUS MATERIALS HANDLING & RESPONSE**

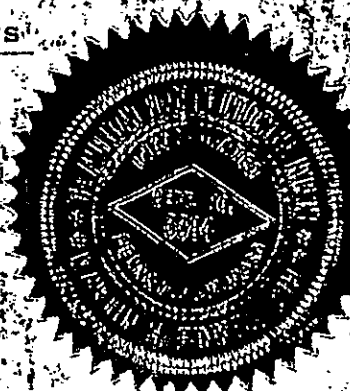
**OSHA 1910.120**

conducted by

*Marine & Environmental Testing*

CEU's 40 Hours

DATE June 6 - 10, 1988



*Martha H. Dinkler*  
Course Director

9513323-0097

# Tri-Cities University Center Continuing Education

presents this certificate to

GLENN T. THORNTON

for successful completion of

HAZARDOUS WASTE: MONITORING AND SAMPLING

and has been awarded 1.4 Continuing Education Units

November 13, 1987

Date

Fred L. Rose

Director of Continuing Education

# TRANSPORTATION SKILLS PROGRAMS



TRANSPORTATION SKILLS PROGRAMS, INC.

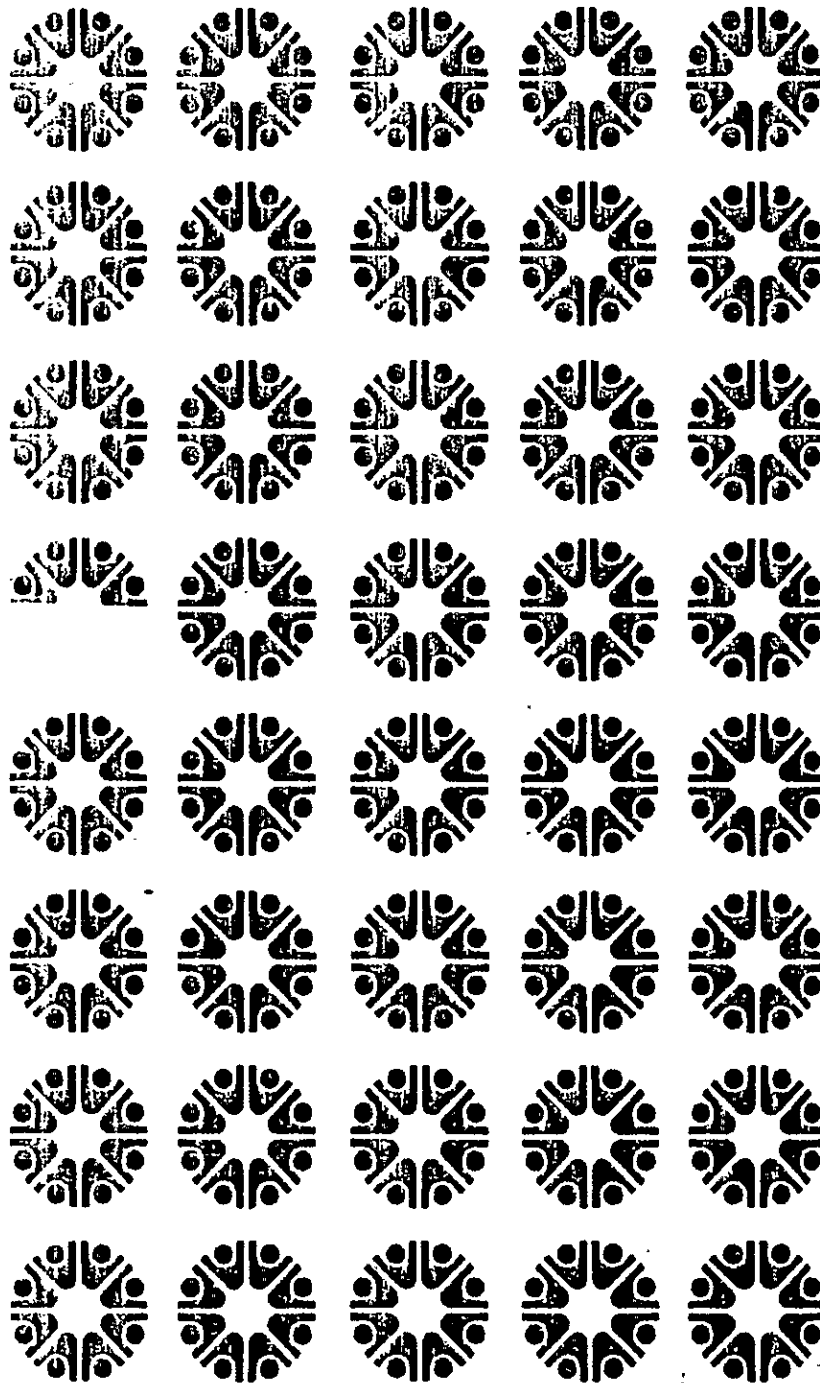
This is to certify that Glenn Thornton  
has successfully completed the

**TSP Hazardous Materials, Chemicals, and Waste Management and  
Compliance Seminar**

In a sincere effort to comply with the  
mandatory and annual training requirements of  
the U.S. Department of Transportation, the  
Environmental Protection Agency, and the  
Occupational Safety and Health  
Administration.

1987

Robert J. Keegan  
Robert J. Keegan, President



**Battelle**

Pacific Northwest Laboratories

# Certificate of Completion

Glenn Thornton

has successfully completed a course in  
**Industrial Lift Truck Safety**

Date 2-25-88

R. A. BRIGHT

Instructor

Jan Bright

Dept. Manager

9513323.0100



**EMERGENCY TRAINING CHECKLIST**  
for  
**SIMULATED HIGH LEVEL WASTE SLURRY TREATMENT/STORAGE**  
performed for the  
**EXCESS MATERIALS GROUT PROJECT**

EPA/STATE I.D. NUMBER: WA7890008967

EMPLOYEE NAME: *Glenn Thornton*

TRAINING DATE: *8/3/88*

TRAINER: *Paul Martin*

TRAINER TO INITIAL ITEMS THAT EMPLOYEE CORRECTLY LOCATES

FIRE EXTINGUISHER: *PM*

ABSORBENT: *PM*

ACID SPILL NEUTRALIZER: *PM*

CAUSTIC SPILL NEUTRALIZER: *Na(OH Acid) PM*

EMERGENCY COMMUNICATION DEVICE (PHONE): *PM*

PROTECTIVE CLOTHING STORES: *PM*

SAFETY EYEWASH/SHOWER: *PM*

SITE PLANS: *PM*

DRUMMED EMERGENCY WATER SUPPLY: *PM*

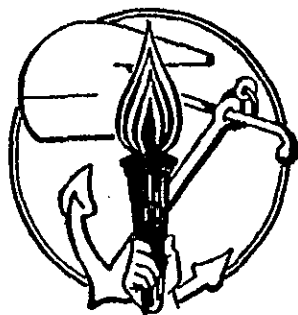
1234 BUILDING WATER SOURCES: *PM*

COMPRESSOR SHUT OFF SWITCH: *PM*

FORKLIFT KILL SWITCH: *PM*

EMPLOYEE SIGNATURE *Glenn Thornton* DATE *8/3/88*

TRAINER SIGNATURE *Paul R Martin* (PM) DATE *8.3.88*



P.O. Box 1142  
Beaverton, OR 97075-1142

(503) 286-2950  
24-Hour Answering Service

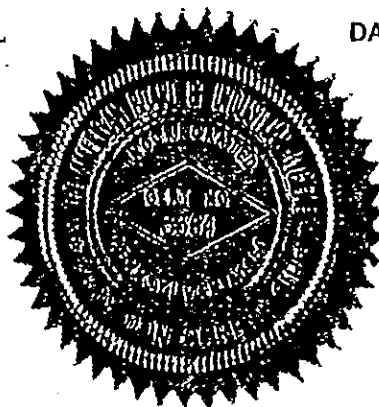
PAUL F.C. MARTIN

has completed the course  
**HAZARDOUS MATERIALS HANDLING & RESPONSE**  
**OSHA 1910.120**  
conducted by

*Marine & Environmental Testing*

CEU's 40 Hours

DATE June 6 - 10, 1988



Martin H. Dinkel  
Course Director

9543322.0103

●  
Babette

**LABORATORY SAFETY DEPARTMENT**

Certifies that Paul F. C. Martin

Has completed  
Right-to-Know  
Training

9/16/88 Date J.T. Denovan  
J.T. Denovan, Manager



**EMERGENCY TRAINING CHECKLIST**  
for  
**SIMULATED HIGH LEVEL WASTE SLURRY TREATMENT/STORAGE**  
performed for the  
**EXCESS MATERIALS GROUT PROJECT**

EPA/STATE I.D. NUMBER: WA7890008967

EMPLOYEE NAME: Paul F. C. Martin

TRAINING DATE: 8.3.88

TRAINER: Glenn T. Thornton

TRAINER TO INITIAL ITEMS THAT EMPLOYEE CORRECTLY LOCATES

FIRE EXTINGUISHER: *YZZ*

ABSORBENT: *YZZ*

ACID SPILL NEUTRALIZER: *YZZ*

CAUSTIC SPILL NEUTRALIZER: *YZZ*

EMERGENCY COMMUNICATION DEVICE (PHONE): *YZZ*

PROTECTIVE CLOTHING STORES: *YZZ*

SAFETY EYEWASH/SHOWER: *YZZ*

SITE PLANS: *YZZ*

DRUMMED EMERGENCY WATER SUPPLY: *YZZ*

1234 BUILDING WATER SOURCES: *YZZ*

COMPRESSOR SHUT OFF SWITCH: *YZZ*

FORKLIFT KILL SWITCH: *YZZ*

EMPLOYEE SIGNATURE Paul F. C. Martin

DATE 8.3.88

TRAINER SIGNATURE Glenn Thornton

DATE 8/3/88

NAME: Arey, BW  
PAYROLL #: 39587  
JOB CODE: 3140  
ADDRESS: 3720/300  
JOB TITLE: TECHNICIAN II SENIOR  
ORGANIZATION: D7E32

QA & TECHNICAL TRAINING COURSES

Course Code	Rev	Class Date	Retrain Date
GEN-7,8,9	0	05/20/85	0
LTC-004	0	04/24/86	0

SAFEGUARDS & SECURITY TRAINING COURSES

Course Code	Rev	Class Date	Retrain Date
SET-001	3	06/14/88	0689
SET-002	1	10/22/87	1088
SET-006	0	06/04/86	0

SAFETY TRAINING COURSES

Course Code	Rev	Class Date	Retrain Date
SAF-RP-001	0	04/01/85	0
SAF-RS-002	1	04/21/87	0489
SAF-WM-001	0	09/19/86	0987
SAF-WM-005	0	07/25/88	0789

GENERAL TRAINING COURSES

Course Code	Rev	Class Date	Retrain Date
FIN-001	0	11/17/86	0
-PER-002	0	06/14/88	0

COMPLETED TRAINING ASSIGNMENTS

Date Assigned

BRIEFING DOCUMENTATION

Date	Title
11/07/84	ELECTRICAL HIGH VOLTAGE SAFETY
11/07/84	VACUUM SYSTEMS ORIENTATION, SAFETY
11/17/86	BUILDING EMERGENCY PROCEDURES
01/05/87	EYE AND FACE PROTECTION
05/04/87	COMPRESSED GASSES SAFETY

ACADEMIC COURSES

Quarter	Year	School	Title
WINTER	1986	TUC/WSU	STRESS CORROSION ENG MAT

SEMINARS AND CONTRACTOR COURSES

Date	Title
------	-------

HANFORD ENVIRONMENTAL HEALTH FOUNDATION  
 RESPIRATOR FITTING RECORD  
 29587  
 JIM REEV  
 is approved to wear the following respirators:  
☒ MSA Unirave M  
☒ SCOTT L  
☒ MSA COMFO II-5  
☐ Correction Required  
 AUG 1989



ADDITIONAL FACIAL  
HAIR VOIDS APPROVAL

HANFORD ENVIRONMENTAL HEALTH FOUNDATION  
 RESPIRATOR FITTING RECORD  
 39611  
 PE MARTIN  
 is approved to wear the following respirators:  
☒ MSA Unirave M  
☒ SCOTT SMALL  
☒ NORTON M  
☒ MSA COMFO II-5  
☐ Correction Required  
 AUG 1989



ADDITIONAL FACIAL  
HAIR VOIDS APPROVAL

**EMERGENCY TRAINING CHECKLIST**  
for  
**SIMULATED HIGH LEVEL WASTE SLURRY TREATMENT/STORAGE**  
performed for the  
**EXCESS MATERIALS GROUT PROJECT**

EPA/STATE I.D. NUMBER: WA7890008967

EMPLOYEE NAME: Bruce W. Azev

TRAINING DATE: 8-3-88

TRAINER: Glen T. Thoreen

**TRAINER TO INITIAL ITEMS THAT EMPLOYEE CORRECTLY LOCATES**

FIRE EXTINGUISHER: NT

ABSORBENT: NT

ACID SPILL NEUTRALIZER: NT

CAUSTIC SPILL NEUTRALIZER: NT

EMERGENCY COMMUNICATION DEVICE (PHONE): NT

PROTECTIVE CLOTHING STORES: NT

SAFETY EYEWASH/SHOWER: NT

SITE PLANS: NT

DRUMMED EMERGENCY WATER SUPPLY: NT

1234 BUILDING WATER SOURCES: NT

COMPRESSOR SHUT OFF SWITCH: NT

FORKLIFT KILL SWITCH: NT

EMPLOYEE SIGNATURE Bruce W. Azev DATE 8-3-88

TRAINER SIGNATURE Glen T. Thoreen DATE 8/3/88

APPENDIX I

PNL-MA-43 SECTION 5, SAFETY TRAINING

## 5.0 SAFETY TRAINING

### INTRODUCTION

Each staff member at Battelle shall be trained to perform their work assignments safely and to take appropriate emergency actions to mitigate the consequences should an accident occur.

Integration of safety and occupational health into existing learning experiences to the maximum extent feasible ensures that training is pertinent to work assignments and is time and cost efficient. Also, when safety training is incorporated into operational instruction, the staff member is not only taught how to perform a task, but how to perform it safely.

Training is a line management responsibility. The Laboratory Safety training coordinator is available to line management to provide guidance on safety matters and to identify and arrange for expertise to provide training in specific areas and subjects.

### SAFETY TRAINING CRITERIA

Training criteria are descriptions of the various types of training required by the staff to perform the work of the organization. To develop training criteria, line management should list all staff members (include the manager, secretarial and clerical staff, hourly and part-time employees, COE students, exempt and nonexempt) and their specific safety training needs. This can be accomplished by:

- reviewing the present qualifications and experience of each staff member
- reviewing the work assignments of each staff member and identify and list the specific safety training needs within the section based upon the work assignments
- describing in detail each safety training need
- listing the appropriate procedures to be used for training, e.g., Radiation Work Procedures (RWPs), Radiation Control Specifications, Standard Operating Procedures (SOPs), Good Laboratory Practice Procedures, Job-Hazard Breakdowns (JHBs), equipment operating manuals, Protocols, etc.
- indicating the retraining frequency
- identifying the training required to ensure that assignments can be performed safely.

## IMPLEMENTATION (contd)

Some suggestions are listed below for the trainer to use to help ensure that the training is effective.

- Prepare an outline of course content.
- Assemble aids such as audiovisual equipment, handouts, or actual hardware in advance, and test them for proper operation.
- Arrange for the use of workplaces or classroom space.
- Ensure that the trainees are informed of the exact time and location of the training.

## DOCUMENTATION

Due to the wide diversity of required safety training, the documentation of that training will also be diverse. Complete safety training records are imperative because such records are used to verify training efforts and to assess the adequacy of the training. Each section is responsible for maintaining their own documentation. The required documentation is presented below.

*Safety Training Criteria* identify in detail the training needs of the organization, including the frequency of retraining. Each criterion must include a moderately detailed description of the scope of the training and all appropriate procedures associated with the criteria, such as RWPs, SOPs, and JHBs. The first criterion is usually the facility orientation taken from the "Orientation Schedule For New Staff Members" and is made specifically for the requirements of each section. This is followed by general criteria such as Emergency Preparedness, Office Safety and Vehicle Safety, which are required by most sections for most staff members. Other generalized criteria are Respiratory Protection and General Radiation Safety. More specific criteria are Crane Operator Certification, Air Sampling, Hot Cell Equipment and Rolling Mill Complex training. These titles are examples of the range of criteria; however, the section's criteria reflect the work of the section.

*Training records* are the who, what, when, and where. They include the legible name and signature of each individual trained and the signature of the trainer, date of the training, and a description that identifies the operating procedures and safety specifications reviewed. Battelle forms BC-1060-066, BC-1060-067 and BC-1060-068 should be used for training documentation purposes. (See Exhibits 5.1-3)

*Evaluations* of the training effectiveness of radiation workers, which may be written, oral, or demonstration testing, must be performed. DOE Order 5480.1A requires

**SAFETY TRAINING  
CRITERIA  
(contd)**

From this outline the total training needs of the organization can be compiled along with a description of each of the training subjects and its frequency. This becomes the criteria that safety training is based upon and is called the "Safety Training Criteria."

The Safety Training Criteria are an important part of the safety training documentation for each section. To augment the training criteria, a matrix should be developed that allows quick identification of training requirements.

**IMPLEMENTATION**

Specific safety training, as identified in the Safety Training Criteria, should be provided to each staff member. Training should be pertinent to their work assignments. Each staff member must thoroughly understand and receive routine reinforcement in the applicable operating procedures, Radiation Work Procedures or Specifications, Criticality Safety Specifications, and Job-Hazard Breakdowns that cover specific work functions. The routine reinforcement is a vital portion of the Job-Specific Safety Training program.

The implementation of the training is conducted to satisfy the Safety Training Criteria. Training priorities are determined by evaluating the Safety Training Criteria. Identification of the criteria's significance will help focus attention on the real problems and avoid mistakes in implementation that may arise from concentrating on nonproblem areas.

Line management is responsible for providing the training but may not necessarily perform training tasks. Line management may, at their discretion, delegate the safety training responsibility to a qualified staff member. The Safety Training Criteria contains a brief description of the training topic and the procedure to be reviewed and should be used as the objective for the instructor. The training may be presented by:

- an experienced staff member
- an inexperienced staff member with supervision. (This is an excellent method for staff development.)
- line management
- other qualified staff members
- outside consultants.



**DOCUMENTATION**  
(contd)

documented evaluation for staff members who work with radioactive or fissionable material or are reactor operators. Evaluation records are similar to training records. By replacing the word training with evaluation on most training formats, evaluation documentation can be created. (See Exhibit 5.3)

All safety training documentation must be retained in the section's training file for at least two years. At the end of the two-year retention period, training documentation is sent to permanent records storage.

**EVALUATION**

Training should be evaluated to verify that staff members have acquired the knowledge, skills, and attitudes for the successful performance of the required tasks. Evaluation starts in the instructional process as tests or demonstrations, and continues over a period of time to determine actual willingness and ability to perform as required on the job. The evaluation should be based on the materials used in the training, which should be referenced in the evaluation documentation. Evaluations may be made at any time and not necessarily in conjunction with actual safety training. However, all required evaluations must be made within the required training or retraining frequency.

Training activities associated with nuclear material work are required to have evaluations of their effectiveness. Nuclear facilities operating under a Safety Analysis Report (SAR), i.e., Fissionable Material Facilities, moderate to high-hazard nonreactor nuclear facilities and Reactor Facilities, are required to have their nuclear-related training evaluated.

The PNL Principal Nuclear Facilities include the 306, 308, 324, 325, 209E Buildings and the 329 Neutron Multiplier Annex. Qualification for working with nuclear materials in these Principal Nuclear Facilities shall require management approval other than the individual's immediate supervisor.

Evaluation of safety training in Principal Nuclear Facilities shall be conducted by written or oral examination or by performance observation. However, evaluation of the reactor operator and senior experimenter training at the Critical Mass Laboratory (209E Building) must be evaluated by all three methods, i.e., written, oral and performance examinations.

Safety training evaluations should be documented and include the following:

- the training title
- date of the evaluation

## EVALUATION (contd)

- signature of the evaluator and the staff member being evaluated
- a description of the evaluation (example questions, observed items, copies of tests, check lists, etc.) an evaluation summary indicating corrective actions, if necessary.

Facilities not required by DOE Order to evaluate their training may choose to evaluate training to ensure that training remains pertinent to work assignments and is effective. Safety training in other facilities may be evaluated by:

- the instructor
- other qualified staff members
- line management
- Laboratory Safety (as a part of the multidisciplinary appraisal).

## CENTRALIZED COURSES

Some safety training is required by a large number of staff members; therefore, several centralized courses are offered as a service to line management and include the following areas.

### New-Hire Orientation

All staff members shall attend a new hire orientation within the first week of their employment. This orientation will contain information on emergency preparedness, general safety, radiation protection, and security and is automatically scheduled and presented by the Personnel Department.

### Facility Orientation

All staff members shall be provided a facility orientation within the first week of employment or relocation within a facility. The orientation may be given by line management, building management, or other qualified staff member and includes the following:

- employee safety responsibilities
- hazards of the job and how they are controlled
- emergency procedures
- use and care of any protective equipment needed for the job
- accident and injury reporting
- how and where to obtain first aid.

<b>Facility Orientation (contd)</b>	The responsibility for providing this training lies with the cognizant line manager.
<b>Visitor and Vendor Orientation</b>	A brief orientation covering emergency preparedness, general safety, basic radiation protection, and security is scheduled and presented in the ROB reception area for all badged, unescorted visitors and vendors.
<b>Emergency Preparedness Training</b>	Emergency preparedness training is an annual training requirement for all staff members. The training should cover information on emergency alarms and signals and their appropriate emergency actions; the location and use of emergency equipment and alarm boxes; proper contact personnel and procedures; evacuation routes and appropriate staging areas. The training may be provided by the Building Emergency Director at the request of line management, or by the building manager, line manager or other qualified staff. The responsibility for providing and documenting this training lies with the cognizant line manager.
<b>General Radiation Safety Training</b>	All staff members who require unescorted access to radiation areas are required to participate in General Radiation Safety Training, or its equivalent, every two years. This training is scheduled and conducted by Laboratory Safety.  <b>CAUTION:</b> <u>This does not qualify radiation area workers to work with radioactive materials or to supervise radiation work; job-specific training is required.</u>
<b>Respiratory Protection Training</b>	Staff members required to wear or supervise those who wear respiratory protection equipment, are required to participate in respiratory protection training annually. This training and the mask fit by HEHF qualifies the wearer to use air-purifying respirators only. Air-supplied respirators require additional training. This training is conducted by Laboratory Safety.
<b>Hazardous Material Shipping Training</b>	All staff members who participate in the shipment of hazardous materials shall be trained in the correct methods and procedures at least biennially (every two years). Participation in hazardous materials shipping training qualifies Battelle staff members as shipping representatives. This training is scheduled and conducted by Laboratory Safety.
<b>Criticality Safety Training</b>	Operational managers of fissionable material facilities and criticality safety representatives shall participate in biennial criticality safety training (every two years). This training is scheduled and conducted by Laboratory Safety.

## Forklift Safety Training

This course is a comprehensive refresher for experienced forklift operators that uses slides, movies and a workbook. Employees are brought up to a state-of-the-art level of knowledge in the correct operation of forklifts. Accident prevention is heavily stressed with group discussion encouraged. Special hands-on instruction is available for nonexperienced operators. This training is conducted by Craft Services.

## Crane and Hoist Safety Training

This course is a comprehensive refresher for experienced crane operators. Employees use a workbook and view slides and demonstrations to gain proficiency in electrical overhead traveling crane operation and rigging. The employee is refreshed in load calculation, proper application of slings, hand signals and correct crane operation. Special hands-on instruction is available to first-time users. This training is conducted by Craft Services.

## JOB-SPECIFIC SAFETY TRAINING

The training needed by an individual is best developed by the immediate line manager who knows the operations performed, defines the work performance criteria, and knows the hazards associated with the work assignments. The manager also has the best resources readily available, i.e., current staff members who have many years of knowledge and experience in the actual performance of the work assignments.

Battelle is committed to emphasizing job-specific training and depends on the skills, knowledge, and attitude of the staff to tailor the specific training activity. Four major factors should be considered:

- the amount of change in skills, knowledge or attitude.
- the relationship of the Safety Training Criteria to the usual job-specific duties
- the number of staff involved in performing the task
- the impact of improper performance on the health and safety of other staff.

Additional factors to consider in selecting training activities include the urgency and consequences of the training and the readiness to implement training.

Where specialized training requires a trainer from outside your organization, contact the safety training coordinator for guidance and assistance.

**AUDITS AND APPRAISALS**

The formal appraisal of your training program is part of the multidisciplinary safety appraisal system used by Laboratory Safety. The training appraisal consists of five areas: criteria, implementation, evaluation, documentation and staff member interviews. Examples of questions you may be requested to answer are given below.

Criteria

Have the training needs been identified for all staff members?

Are the identified criteria described in adequate detail?

Is reference made to appropriate procedures?

Implementation

Has training been completed at the required frequency?

Is training performed for special or unique activities?

Does training include special protection, i.e., respiratory protection, ALARA, etc.?

Evaluation

What methods of evaluation are used?

Is the evaluation based on procedures?

How are inadequacies corrected?

Documentation

Are the criteria complete with all safety training identified?

Do you have a file of completed training?

Are the evaluation records, signed by evaluator and staff member, on file?

Staff Interview

What kinds of safety training have you received over the past two years?

Who is responsible for providing you with safety training?

Do you feel the safety training you have received is pertinent to your job duties?

**AUDITS AND APPRAISALS**  
(contd)

Apart from formal appraisals, informal interviews are requested to establish and maintain communication between line management and the safety training coordinator. The informal interviews are intended to identify and correct deficiencies prior to conducting the formal appraisals.

END OF SECTION

APPENDIX J

1234 BUILDING EMERGENCY PLAN

BATTELLE - PNL  
1234 BUILDING & YARD

EMERGENCY PROCEDURE

This Emergency Procedure applies to all PNL staff assigned to or entering the 1234 Building warehouse and laydown yard.

Approved: Jeane M. Holder  
PNL Laboratory Safety

6/16/88  
Date

John DeMue  
Coordinator for Emergency Procedures

6-14-88  
Date

Mr S.A. Kostomarov  
PNL Building Manager

6-10-88  
Date

James P. Seeger  
Kaiser Building Manager

6-29-88  
Date

May 1988  
Current Issue Date

May 1989  
Scheduled Review Date



## INTRODUCTION

It is Pacific Northwest Laboratory's policy to provide for the safety of its employees, other contractor personnel, visitors, and members of the general public in the event of an emergency. PNL management has the responsibility to execute this policy and ensure that all employees understand their responsibilities and know the action to be taken in an emergency. In addition, management has certain key responsibilities to control and recover from an emergency.

Personnel safety is engineered into facilities, equipment processes, and procedures to the maximum extent practical. Administrative controls are applied after engineered controls. Each employee is responsible for performing his job in accordance with safety instructions and procedures and to remain alert to unsafe conditions or acts. However, a failure of these safeguards, either by a malfunction of an engineered safety control, or by an employee error, or by the occurrence of a natural disaster, may result in an emergency. The purpose of the Building Emergency Procedure is to provide employees with information necessary to react to emergency situations that may occur in order to:

- maximize employee safety, minimize the risk to life, and provide prompt and efficient treatment for injured persons
- ensure continuity of leadership at all times and in all emergency situations
- minimize the effects of an accident on the health and safety of the general public
- minimize property damage
- ensure prompt internal and external communications with responsible authority
- ensure appropriate and timely response of emergency services.

The 1234 Building is a storage warehouse facility in the KEH complex in the 3000 Area. The building is occupied on an intermittent basis by a limited number of staff members. It is imperative that both PNL and KEH be notified of any emergencies in the facility.

1234 BUILDING EMERGENCY PROCEDURESI. EMERGENCY REFERENCE DATASIGNALS

<u>Signal</u>	<u>Meaning</u>	<u>Response</u>
Gong	Fire	Evacuate building. Move upwind. Keep clear of emergency vehicles.
Siren-Steady 3-5 min. blast	Evacuation	To staging area #1 north of 1252 Building
Wavering Siren	Take Cover	Stay inside until instructed otherwise by emergency response personnel. Shut off ventilation. Shut all doors and windows.

A review of the sirens and alarms can be heard by dialing 373-2345.

Emergency Lists and Telephone Numbers

	<u>Day</u>	<u>Night</u>
For any emergency call:		
• PNL Single Point Contact	9-375-2400	9-375-2400 (24h)
• KEH Single Point Contact	376-5291	Page 85-464

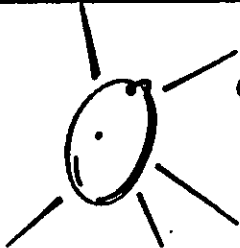
IF there is no answer at 375-2400 call:

• First Aid & Ambulance	811
• Fire	811
• Patrol	811
• Patrol Operations Center	811

Building Emergency Director (BED)

	<u>Work</u>	<u>Home</u>
M. J. Pueschner (Radio Page)	376-3693 (85-378)	967-5078
BED First Alternate - W. C. Rossiter	376-5946	547-2548
BED Second Alternate - E. L. Doan	376-2881	375-0924

# EMERGENCY SIGNALS - 3000 AREA\*

SIGNAL	MEANING	RESPONSE
 <b>GONG</b>	Fire	Vacate building by nearest exit and move upwind. Keep driveways clear.
<b>SIREN</b>  Steady blast for 3 to 5 minutes	Evacuation and Attention	Proceed to designated area. <div>Parking Lot North of the 1252 Building</div> Listen for emergency information. Follow instructions.
<b>SIREN</b>  Wavering for 3 to 5 minutes	Take cover (Seek Shelter)	Take cover indoors and stay there until further instructions are received from emergency authorities.

## EMERGENCY AID

Emergency Phone No.

# 375-2400

### TELL:

What has happened  
Where it happened  
What help is needed

**IN CASE  
YOU DISCOVER  
A FIRE**



- 1. CALL FIREMEN**  
Use telephone  
or fire alarm box.
- 2. FIGHT FIRE**  
Use method set up  
for your building.
- 3. NOTIFY SUPERVISOR**  
Simultaneously  
with above action.

\* A presentation of these signals can be heard over the telephone by dialing 373-2345

943823.0123

BUILDING DIAGRAMS, EVACUATION ROUTES, ETC.

See the following pages

1234 BLDG

← N

X - FIRE EXTING.

TO  
STAGING  
AREA

NO. 1 (NORTH OF 1252 BLDG)

BAY  
4

BAY  
3

BAY  
2

BAY  
1

W/H

W/H

W/H

W/H

W/H

W/H

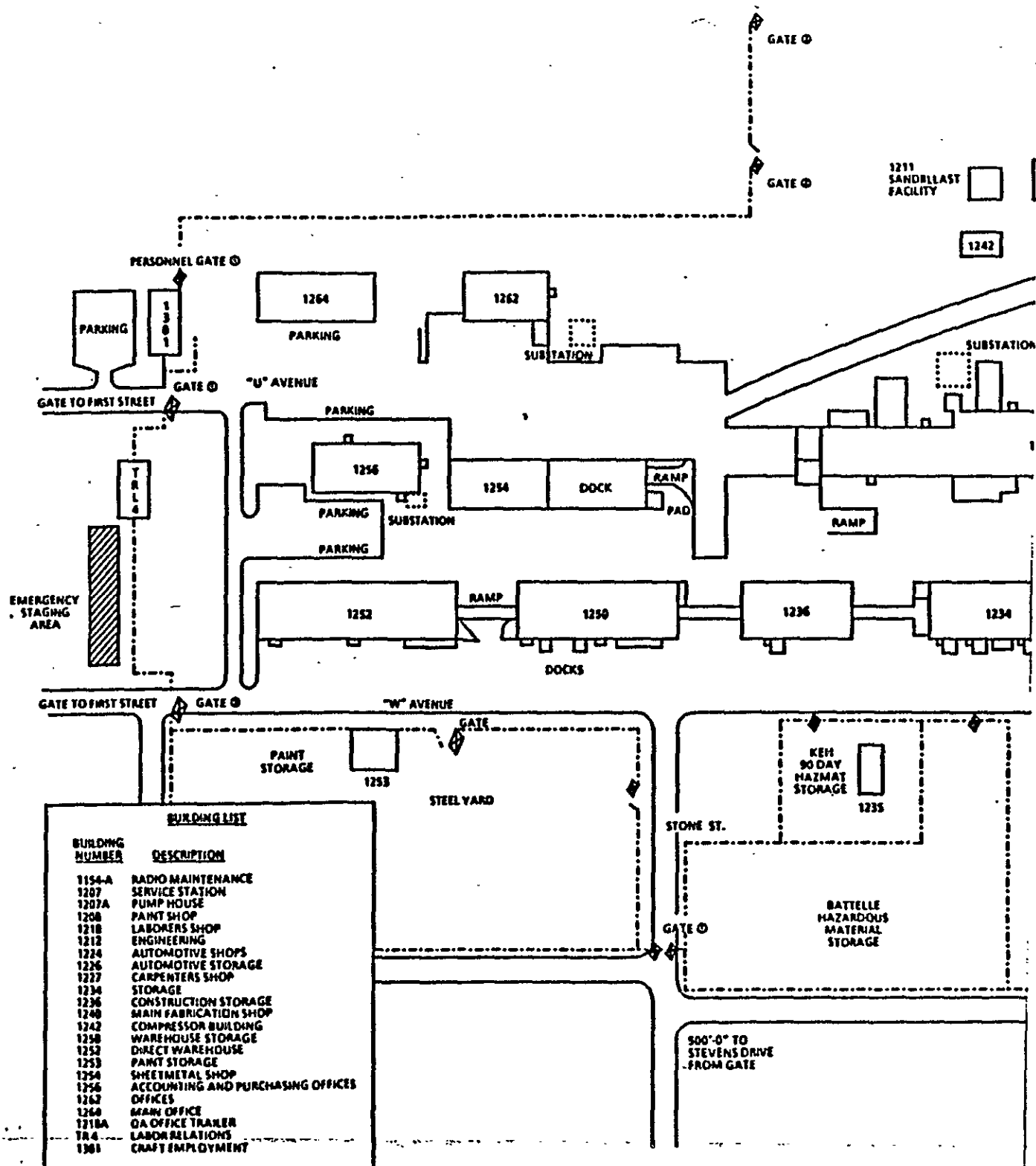
W/H

SPRINKLES VALVE

SEWER  
EAST

TO  
STAGING  
AREA # 1  
(NORTH OF 1252 BLDG)

9513323.0125



9543323.0126

## II. AUXILIARY INFORMATION

### BUILDING EMERGENCY ORGANIZATION

<u>Function</u>	<u>Name &amp; Room No.</u>	<u>Office Phone</u>	<u>Home Phone</u>
Bldg Emergency Director	M. J. Pueschner (85-378)	376-3693	967-5078
First Alternate Building Emergency Director	W. C. Rossiter	376-5946	547-2548
Second Alternate Building Emergency Director	E. L. Doan	376-2881	375-0924
KEH Building Emergency Director	J. L. Geiger	376-7986	735-3868

### RESPONSIBILITIES OF EMERGENCY RESPONSE STAFF

#### Building Emergency Director

The Building Emergency Director is responsible for protecting the welfare and safety of building personnel and, if his building is the event site, for directing efforts to control and terminate the event.

The Building Emergency Director and alternates have identical "Emergency Clipboards" in their offices that are readily available in the event of an emergency. Attached to this clipboard are:

- Copy of the Building Emergency Procedure
- An Emergency Checklist with extra building diagrams

#### Instructions for Staff

- Give the appropriate alarm if any off-normal condition is observed
- Evacuate the building immediately when required to do so. Report to appropriate location and wait for instructions.
- Escort personnel requiring an escort, if requested.
- If instructed to remain in the building, take cover by moving to an interior portion of the building (Signal: wavering siren).

#### Instructions for Visitors

- Follow all general instructions given.
- If escort is required, stay with your escort.

### In Case of Fire

- Give the appropriate alarm; activate fire alarm.
- Evacuate the building - staff move upwind.
- Notify PNL Single Point Contact and KEH Single Point Contact.
- BED standby to assist Fire Department with necessary information.

### III. NON-RADIOLOGICAL DANGEROUS WASTE PLAN

#### INTRODUCTION

The information in this section is in accordance with the requirements for a contingency plan, as contained in 40 CFR 264, Subpart D, and Washington Administrative Codes WAC 173-303-350 and 360.

The intent of 40 CFR Part 264, Subpart D (Contingency Plan and Emergency Procedures), is to ensure that facilities have established the necessary procedures to follow in the event of an NRDW emergency situation. The intent of the requirements under 40 CFR, Part 264, Subpart D (Preparedness and Prevention), is to ensure that each facility is properly designed and equipped to minimize the possibility of accidents and prevent the occurrence of emergency situations. Requirements for the Contingency Plan and Emergency Procedures are addressed in this section.

The purpose of WAC 173-303-350 and 173-303-360 is to further lessen the potential impact on the public health and environment in the event of a fire, explosion, or unplanned release of dangerous waste from a facility to the air, soil, surface water or ground water. The WAC requirements are addressed in this document. In addition, MG 11.6 of the PNL Management Guides requires that emergency plans and procedures be established for Battelle's Pacific Northwest Division facilities.

#### GENERAL

This NRDW plan is for the use by Pacific Northwest Laboratory, including those located on the U.S. Department of Energy (DOE) Hanford Site and in Richland, Washington. The Pacific Northwest Laboratory, operated for the DOE, is a research and development laboratory with more than 1500 laboratories and research areas. These laboratories and research areas generate chemical waste as a by-product of the laboratory activities. Some chemical waste are considered dangerous waste and the facilities generating these wastes need appropriate emergency procedures.



**EMERGENCY SERVICES****Hanford Site**

The Hanford Site has fire and patrol personnel trained and equipped to respond to emergencies. Rockwell Hanford Operations provides the fire and patrol services for the Hanford Site. The Fire Department Hazardous Material Response Team is trained for mobilization and control of hazardous material emergencies. The Fire Department will take control of the event scene until the emergency incident is under control and personnel rescue is complete.

The Hanford Patrol Department provides support to the Fire Department during an emergency incident, including but not limited to, activation of area crash alarm telephone systems and area sirens (for evacuation or take cover), access control, and emergency notifications.

**Offsite**

The Richland Fire and Police Department will respond to emergencies in PNL and DOE-leased facilities located in the City of Richland. Immediate control of the emergency will be to minimize the risk to life, health, and property.

The Richland Fire Department will take control of the event scene until the emergency is under control and/or personnel rescue is complete. The Richland Police, when requested, will support the Fire Department during an NRDW emergency, providing services within their law enforcement function.

**Emergency Control Center**

If a NRDW emergency threatens other facilities and/or there is a danger of release of hazardous material to the environment, the 300 Area and/or 3000 Area Emergency Control Center will be activated. The Emergency Control Center will 1) provide any assistance requested by the Building Emergency Director, who has responsibility for the emergency at the event site and field control point; and 2) coordinate protective response actions, and notifications, and 3) furnish technical assistance, if necessary.

**EMERGENCY EQUIPMENT**

In accordance with 40 CFR 264.52e, and WAC 173-303-350(3)(e), this section lists emergency equipment available to the Fire Department and discusses the emergency equipment at the facility. Table 1 summarizes the material available for spill containment and cleanup.

**Hanford Fire Department Equipment Available for Hazardous Materials Accidents**

The following hazardous material equipment for hazardous material response is available from the Hanford Fire Department:

Hazardous Materials Response Vehicle Equipment Inventory

- 1 Compass - hand held
- 1 Compass/mounted
- 2 Hand lanterns - rechargeable
- 1 Micro scanner, heat detector
- 1 Polaroid camera
- 1 Weather station
- 6 SCBA with 1 hour bottles
- 4 30 Minute SCBA bottles
- 1 Earmark base station with 6 Earmark individual unit
- 30 Plug N'Dike
- 6 Plug N'Dike Kits - Epoxy
- 4 Danger spill signs
- 3 Plug Rugs (S, M, L)
- 1 Tool box - assorted nonsparking tools
- 1 A-1 haz mat response kit
- 1 A-2 haz mat response kit
- 2 Dozen rubber gloves
- 4 Dozen canning gloves
- 1 Thermal tarp
- 2 Pair binoculars
- 4 Tank sealing kits - large
- 6 Haz mat suits - encapsulated
- 3 Roll warning tape
- 2 Electrical tape, 3 duct and 6 masking
- 4 Packages organe gloves
- 1 Drager multi-gas detector with tubes
- 17 Dozen surgeon gloves
- 1 Portable computer base

Reference Materials

- 1 Haz Mat information
- 1 Manufacturers Safety Data Sheet
- 1 Haz Mat Spill Control Handbook
- 1 Emergency Action Guides
- 1 Selection of Haz Mat Clothing
- 1 Merck Index
- 1 Industrial Fire Haz Mat Handbook
- 1 Chemical Dict.
- 1 Fire Protection on Haz Mat
- 1 1984 Emergency Response
- 1 Haz Mat Handbook
- 1 Haz Mat Injuries Handbook
- 1 Common Sense Approach to Hazardous Materials Handbook

Hazardous Materials Response Trailer Equipment Inventory

- 2 Electrical Cord Reels
- 2 5 Gal, Buckets Plug N'Dike
- 4 Brook - 2 large, 2 small

- 2 Proximity Suites
- 3 Ropes
- 3 Radiation Marking Robes
- 3 Tarps
- Rubber Boots
- Leather Gloves
- 3 Shovels
- 1 Roll Screen
- 2 Roll Masking Tape
- 10 Metal buckets; 4 large and 6 small
- 2 Five gallon buckets Sodasorb
- 10 Rolls visqueen 6 mil 20' x 100'
- 2 Boxes 39" x 54" plastic bags
- 4 Boxes heavy weight rubber gloves
- 1 Box wooden blocks
- 2 Emergency reflectors
- 1 Sawsall
- Miscellaneous tools (drills, pipe wrenches, hammer, etc.)
- 5 Portable lights
- 8 Miscellaneous electrical adapters
- 2 Pair electrical gloves
- 1 Drill - 5/8"
- 3 Plug Rug
- 4 Bags Absorbent - Safstep
- 1 Generator/Electric Start
- 1 Portable Decontamination Shower

The Richland Fire Department has no Hazardous Material Response Team operational at this time. The Richland Fire Department requests assistance from the Hanford Fire Department through the DOE, as required.

TABLE 1. Materials and Equipment for Spill Containment and Cleanup

<u>Materials/Equipment</u>	<u>Quantity</u>	<u>Substances Contained, Absorbed, or Cleaned Up</u>	<u>Notes</u>
Industrial Absorbents	1 pallet	To absorb small spills of solvents and aqueous material.	

BUILDING EMERGENCY EQUIPMENT

fire sprinkler system  
 fire extinguishers  
 portable eye wash station  
 industrial absorbent

## V. NRDW RESPONSE PROCEDURES

The following emergency response procedures include notifications; identification of dangerous materials; hazard assessment; procedures for controlling spills, releases of materials, fires or explosions; prevention of

### PROTECTIVE CLOTHING AND EQUIPMENT

Protective clothing and equipment are provided to safeguard employees during normal and emergency operations.

rain suits  
face shields  
gloves  
rubbers  
safety goggles

## IV. IMPLEMENTATION

The Building Emergency Director is familiar with all aspects of the Building Emergency Procedure, all operations and activities on-going within the building, the types of waste being handled, the location of records, and the building layout. If the facility has an incident which could threaten human health or the environment, then the emergency procedure is implemented.

The following are examples of emergencies that would warrant implementation of the BEP:

A fire and/or explosion occurs, such that

- potential for human injury exists
- toxic fumes are released
- fire could spread and possibly ignite other flammable materials or cause heat-induced explosions
- use of water and/or chemical fire suppressants would result in contaminated run-off
- imminent danger exists that an explosion could ignite other hazardous waste at the facility and possible result in the release of toxic material.

A spill or release of a hazardous material occurs, such that

- the spill could result in the release of flammable liquids or vapors, thus causing a fire or glass explosion hazard
- the spill could cause the release of toxic liquids or fumes in concentrations that would endanger employees
- the spill can be contained at the scene, but the potential exists for surface or groundwater contamination

1. The discoverer to a spill will immediately evacuate the area and call the PNL Single Point Contact (375-2400) and provide as much information as possible.
2. The Single Point Contact will notify the Building Emergency Director.
3. The Building Emergency Director will proceed directly to the scene.
4. The BED and or building occupants will advise any emergency response team (e.g., fire department, ambulance attendants of the nature and location of dangerous materials).
5. The BED or alternate will direct the action required to stabilize the spill or release, with help and advise from others (i.e. Laboratory Safety).
6. When the emergency situation has stabilized, BED shall notify the PNL single point contact - 375-2400.

#### NRDW Fire or Explosion

The following actions will be taken in the event of a fire or explosion:

1. Turn on fire alarm.
2. Immediately evacuate building.
3. Move upwind.
4. Keep clear of emergency vehicles.

#### PREVENTION OF RECURRENCE OR SPREAD OF FIRES, EXPLOSIONS, OR RELEASES

The Building Emergency Director is responsible for taking the steps necessary to ensure that a secondary release, fire, or explosion does not recur after the initial spill/incident. Procedures that will be implemented may include, but not be limited to the following:

- inspection of containment for leaks or cracks
- inspection for gas generation
- isolation of residual waste materials
- reactivation of adjacent operations only after cleanup of residual waste materials is achieved.

#### STORAGE AND TREATMENT OF RELEASED MATERIAL

For emergencies not involving activation of the Emergency Control Center, the Building Emergency Director is responsible for ensuring that conditions are restored to normal before operations are resumed. Off-normal events shall be

reported and investigated per the requirements of PNL-MA-7, Off-Normal Event Reporting System.

If the Emergency Control Center was activated and the emergency phase completed, a special recovery organization may be appointed at the discretion of the Area Emergency Director to restore conditions to normal. The make-up of the organization will be dependent on the extent of the damage and its affects. The recovery organization will be appointed by the Area Emergency Director.

Immediately after an emergency, the Building Emergency Director or the recovery organization, if appointed, will make arrangements for the cleanup phase. It is during the recovery phase that cleanup procedures will begin. Procedures for treatment, storage, or disposal of recovered waste or any other material resulting from a release, fire, or explosion at the facility, are implemented at this time.

Hazardous wastes will be contained in drums or other appropriately sized containers and transported to the Hanford 200 Area Waste Storage Area. The PNL Laboratory Safety Department Hazardous Material Safety section must be contacted for support and guidance during this phase.

Cleanup may include the following actions:

- Small spills will be neutralized using approved methods, if necessary, treated with absorbent material and the residue packed in drums for disposal.
- Leaking drums will be packed in overpack drums.
- All chemically contaminated soils and cleanup debris will be thoroughly cleaned up and contained for disposal.
- At all times, efforts will be made to segregate incompatible waste during cleanup operations.
- The Building Emergency Director or the recovery organization, if appointed, has the responsibility to make cleanup arrangements. They will ensure that all response equipment is decontaminated and readied for service or, if not fit for further use, is disposed of properly by excessing, salvaging, or burial.

#### Incompatible Waste

After an emergency, the Building Emergency Director or the Recovery organization, if appointed, will ensure that no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.

#### Postemergency Equipment Maintenance

After an emergency, the Building Emergency Director or the recovery organization will ensure that all emergency equipment at the facility is cleaned and operable for its intended use before operations are resumed.

### Container Spills and Leaks

A leak or spill from any of the storage containers may be detected based on an odor when entering the facility or during the container inspection. The following actions should be taken upon detection of a spill or leak within the facility:

- The discoverer of a leak or spill will notify the Single Point Contact at 375-2400.
- Depending on the material spilled and the quantity, the Building Emergency Director shall enlist assistance from qualified staff members.
- The material shall be neutralized first, if necessary, and then absorbed and the residue and broken container packed for disposal.
- Any material remaining in a leaking container shall be transferred to another container that is compatible with the material.

### VI. COORDINATION AGREEMENTS

The presence of more than one DOE contractor on the Hanford Site allows for the sharing of emergency equipment and personnel. All contractors have sufficient familiarity with the operations of each other to be of assistance with a minimum of direction.

The DOE-RL has Memorandum of Understanding and Emergency Service Agreements in place with the local police and fire department, hospitals, and contractors for response actions in the case of an emergency. These agreements establish a framework of cooperation between these groups in the planning for the response to emergencies.

Coordinated emergency services agreements and Memorandum of Understanding have been established in writing between the DOE-RL, and the:

- State of Washington
- Benton and Franklin Counties
- Washington Public Power Supply System
- Federal Aviation Administration Department of Transportation
- National Weather Service
- Our Lady of Lourdes Hospital
- Kadlec Hospital
- Kennewick General Hospital

- U.S. Coast Guard
- the states of Washington and Oregon and Washington Public Power Supply System (Radiological Assistance Response)
- City of Richland

## VII. REQUIRED REPORTS

The submission and retention of reports for an emergency incident is detailed in the PNL Management Guides 11.6 and PNL-MA-7, Off-Normal Event Reporting System.

PNL policy states that unusual occurrences shall be promptly investigated, reported and analyzed to ensure that effective corrective actions are taken in compliance with contractual, statutory and corporate requirements. Three levels of reporting are required, depending on the extent of the emergency: event fact sheets, off-normal event reports, and unusual occurrence reports.

An event is a significant deviation from normal operation that may or may not be reportable as an unusual occurrence. It requires PNL management evaluation to determine the depth of investigation and level of reporting.

An off-normal event report is an evaluation of those events that PNL management has determined require investigation beyond that identified in the Event Fact Sheet.

An unusual occurrence is an event outside normal operations that causes or risks serious injury to personnel or has significant effect upon the safety, reliability or cost of reactors, programmatic facilities or associated equipment, or upon the programs conducted therein. Unusual occurrences may arise during development, fabrication or construction, as well as during operation and maintenance.

The building manager is responsible for investigating each event in his/her area(s) of responsibility and submitting an appropriate report.

## VIII. AMENDMENTS

Amendments to the Building Emergency Procedure will be made when:

1. Applicable regulations or the facility permit are revised.
2. The plan fails in an emergency.
3. The facility changes (in its design, construction, operation, maintenance or other circumstances) in a way that materially increases the potential for fires, explosions, or releases of dangerous waste, or in a way that changes the response necessary in an emergency.
4. The list of emergency equipment changes.



APPENDIX K

PNL SPILL REPORT FORM

SPILLS REPORT CHECKLIST

1. Date/Time \_\_\_\_\_
2. What Facility/Location \_\_\_\_\_  
\_\_\_\_\_
3. What Material(s) \_\_\_\_\_  
\_\_\_\_\_
4. What Quantity \_\_\_\_\_
5. Cause \_\_\_\_\_  
\_\_\_\_\_
6. Impact to Environment \_\_\_\_\_  
\_\_\_\_\_
7. Initial Corrective Action \_\_\_\_\_  
\_\_\_\_\_
8. Contact (Name/Phone) \_\_\_\_\_
9. Suggested Follow-up Action \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

APPENDIX L

JOB HAZARD BREAKDOWN #024

REVIEWED BY D.W. WELCH  
INDUSTRIAL SAFETYPREPARED BY  
G. T. Thornton

Glen Thornton 6/22/88

DATE  
6/22/88DATE  
7-5-88INITIALS  
DW

REVIEW DATES

SAFETY EQUIPMENT REQUIRED

TOOLS &amp; EQUIPMENT REQUIRED

JOB PREPARATION

## PHASE 1: Neutralization

Chemical Goggles  
Acid Suit  
NaOH and  $\text{HNO}_3$   
Resistant Gloves  
Face Shield  
Portable Eye Washes (2)  
Half Mask with HEPA  
Cartridges

Gasoline Powered Air  
Compressor  
Air Powered Mixers  
Air Powered Drum Pumps  
Socket Wrench & Sockets  
Spill Pans, Forklift  
NaOH Solution Tank

- \* Check for presence of fire extin-  
guisher and eyewash
- \* Put on required safety apparel
- \* Read Job Hazard Breakdown
- \* Read Operating Procedure

## PHASE 2: Grouting

Chemical Goggles  
Dust Masks  
Coveralls  
Work Gloves

## HAZARDOUS MATERIALS

- \* Nitric Acid Based  
Hazardous Waste, up  
to 7 vol %  $\text{HNO}_3$
- \* NaOH solid and 19M  
solution
- \* Gasoline

## RELATED REQUIREMENTS

RADIATION WORK PROCEDURE, YES ☐ NO ☒NUCLEAR SAFETY SPEC. YES ☐ NO ☒

## JOB STEP

## HAZARD

## SAFETY RULES AND SAFE PRACTICES

## PHASE 1: Neutralization

1. Make up ~forty 55  
gallon drums of 19 M  
NaOH solution.

Chemical burns from con-  
tact with solid or solu-  
tion and thermal burns  
from hot solution

Wear required safety apparel and avoid  
splashing solution and spilling solid.  
Flush with water if splashed.

2. Add 19 M NaOH solu-  
tion to PW0 or PW7A  
to neutralize.

Chemical burns from con-  
tact with Acidic PW0 or  
PW7A solutions or 19 M  
NaOH solution

Wear required Safety apparel and avoid  
splashing solutions. Flush with  
water if splashed.

Gasoline fire from fuel  
for Air Compressor

Keep ignition sources away from fuel.  
Use fire extinguishers if needed.  
Store fuel in approved flammable  
liquid container.

Heat Stress from working  
in 80° to 110° F heat

Work under awning for shade, keep  
hydrated, take breaks, utilize flex  
time for early morning work to avoid  
afternoon heat.

## PHASE 2: Grouting

1. Add Grout formers  
to neutralized PW0/  
PW7A solutions.

Dusting of Grout formers

Wear Dust Masks

Heat Stress from summer  
temperatures and exhaus-  
tion and injury lifting  
70 to 90 lb Grout former  
bags

Work under awning for shade, keep  
well hydrated, take breaks, utilize  
flex time to avoid working in after-  
noon heat. Use proper lifting tech-  
nique to avoid back injury.


Gasoline fire from com-  
pressor fuel

Keep ignition sources away from fuel.  
Use fire extinguishers if needed.  
Store fuel in approved flammable  
liquid container.

PAGE 1 OF 1

APPENDIX M

PROJECT FILE INDEX

 <b>Battelle</b> Pacific Northwest Laboratories		<b>PROJECT FILE INDEX</b>		Date <u>5/26/88</u> Rev. <u>0</u>	
Project Title (from statement of work) <b>Excess Materials Grout Project</b>				Document No.	
Name of Client <b>Facilities</b>		Project No. (Acctg or W. P.) <b>95122</b>		QA Plan No. <b>WTC-052</b>	
Project Manager <b>G. T. Thornton</b>		Records Custodian <b>G. T. Thornton</b>			
PNL-MA-80 ( ) PNL-MA-70 (X)		Retention Classification (Records are classified Lifetime unless specified otherwise by the client) (X) Lifetime ( ) Nonpermanent ( ) Long term ( ) Short term			
Dual Storage Required ( ) Yes (X) No		Frequency of Turnover to Client ( ) Annually ( ) Every 2 Years (X) Other			
Concurrence <i>[Signature]</i> <u>6-6-88</u> Quality Engineer R14#00138 (Date) <i>[Signature]</i> <u>6-7-88</u> PNL Records Management (Date)		Approval <i>[Signature]</i> <u>6/3/88</u> Manager or Designee (Date)			
Functional Classifications		Custodian		Location	
A. ADMINISTRATION A1 Policy and Management A3 Reports C. STAFF AND PUBLIC COMMUNICATIONS C1 Staff Communications C5 General Correspondence F. FINANCE AND ACCOUNTABILITY F1 Budgets and Forecasts F2 Cost Accounting F3 Travel I. INDUSTRIAL SAFETY I1 Safety Standards and Procedures I2 Safety Reports and Data I5 Education and Training N. PROCUREMENT N1 Purchasing 1830 N5 Equipment and Supplies		G. T. Thornton ↓		324/205/300A ↓	

**PROJECT FILE INDEX  
(Continuation Sheet)**Page 2 of 2  
QA Plan No. WTC-052

Functional Classifications	Custodian	Location
<b>O. OTHER SERVICES</b> 01 Records Management 06 Photography	G. T. Thornton	324/206/300A
<b>P. PERSONNEL</b> P1 Personnel Folders		
<b>Q. QUALITY ASSURANCE</b> Q1 QA Program Q2 QA Audits Q3 Unusual Occurrences and Events		
<b>R. RADIATION PROTECTION</b> R1 Standards and Procedures		
<b>T. TECHNICAL</b> T1 Grout Formulation Development T2 Product Sample Testing T3 Product Waste Designation T4 Equipment Sketches T5 Part A Permit Application and Reviews T6 Processing Procedures T7 Transportation and Disposal		
51		